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from General Practice

Volume III (Disease in General Practice)

by

THE RESEARCH COMMITTEE OF THE COUNCIL OF
THE COLLEGE OF GENERAL PRACTITIONERS

With a foreword by

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The interpretation of the figures and the views expressed by individual authors are entirely the responsibility of those authors and the fact that the volume is published under the official auspices of the General Register Office must not be taken to give official authority to all that is said in the volume.

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FOREWORD

The investigation made by the College of General Practitioners and the General Register Office into the distribution of disease seen in general practice has been the subject of two earlier reports* in which the treatment has been mainly statistical. It is hoped that this will not have necessarily discouraged the less specialised reader from giving to them that attention and study which their importance merits. But it was also considered appropriate that the cream of these investigations should be presented in the form of a narrative in which the results were expressed in a clinical rather than a mathematical medium. The report which follows is an attempt to give effect to this intention.

In its treatment of the subject the report is both an abstract and a commentary - an abstract inasmuch as where statistics are quoted they are those culled from the main investigation, a commentary where the significance of the figure is assessed and discussed. There is much in this volume to interest general practitioners throughout the country.

Furthermore, its publication should provide useful guidance for the framing of future surveys of national morbidity which will undoubtedly be stimulated by a consideration of the recognised lacunae in the present investigation.

Perhaps its greatest value will lie in its potential effect upon those readers who are concerned with the training of students of medicine. It certainly provides a valuable stimulus to thought and may possibly influence the content and character of the instruction of the doctors of the future.

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May 1962.

*LOGAN, W. P. D., and CUSHION, A. A. Studies on Medical and Population Subjects, No. 14 - Morbidity Statistics from General Practice: Volume I (General). H.M.S.O. London, 1958.

idem. Volume II (Occupation). H.M.S.O. London, 1960.

INTRODUCTION

Dr. R. J. F. H. Pinsent

General practice is the application of the science of medicine to the art of healing in all its aspects, and it involves the whole range of illness in mankind. It is the fountain head of all the specialities and its traditions extend back to the beginning of man's community life and civilisation. Today the function of the general practitioner is in a state of transition and change, but general practice will go on in varied forms and guises so long as there are sick persons in need of help.

Direct access of the patient to his family doctor at any hour of the day or night is one of the peculiar characteristics of general practice, and because the doctor can be consulted about any symptom or problem, the range of his duties is immense. He may deliver a breech birth and go thence to the death-bed of some old person. He may be called to an accident by the roadside or down a coal-mine, or he may be required to attend a court of law as an expert witness. As he listens to the case history, he has to unravel the layman's problem and translate lay terms into the idiom of medicine.

In different places and in different ages, the consultation has varied widely in form and content, but it has always remained the essential and basic feature of general practice. J. C. Spence defined this concept clearly and in impressive terms as follows: "The real work of a doctor is not an affair of health centres, or public clinics, or operating theatres, or laboratories or hospital beds. Techniques have their place in medicine but they are not medicine. The essential unit of medical practice is the occasion when, in the intimacy of the consulting room or the sick room, a person who is ill, or believes himself to be ill, seeks the advice of a doctor whom he trusts. This is a consultation, and all else in the practice of medicine derives from it."

The intimate nature of the contact between the patient and his doctor has long been recognised; but until recently little or no attempt has been made to make use of such contacts for the accurate observation of morbidity. This can best begin when the patient is first seen by his family doctor. An attempt is then made to reach a diagnosis so that the correct treatment can be prescribed. If besides observing the various illnesses which come his way, the doctor records them for an objective analysis, he is making use of statistical methods and to the art of medicine he is adding science.

In some countries specialists are approached direct by people who believe themselves to be ill and suffering from a condition that they can localise to a particular speciality. In the British Isles, however, and to a great extent in the Commonwealth, the general practitioner has remained the individual first consulted by a person who is ill, and the ethical avenue to the specialist's consulting room is through the general practitioner's surgery. It is here, in general practice, that the vast proportion of significant morbidity in the community is seen. A few patients seek treatment in an emergency from the casualty departments of the hospitals, and a few more consult unqualified practitioners. An unknown amount of illness is never revealed. The sufferer either ignores his symptoms or treats them himself. The extent of this area of morbidity can only be surmised, and, although it sometimes includes serious disease in its early stages, no accurate survey along these lines has so far been achieved, though The Survey of Sickness 1943-52 (1) gives a broad indication. For practical purposes it can be accepted that the general practitioner sees, during the course of a year, virtually all the significant illness in his practice.

In the absence of records deliberately maintained for research purposes every practitioner develops clinical impressions concerning his work, and of changes that may take place in its pattern. For example, we all know there has been a fall in the incidence of rheumatic fever, and the virulence of scarlatina has waned. In the past, much medical teaching was based on such impressions which were sometimes quite remarkable for their accuracy. However, in scientific studies impressions alone are inadequate; they are qualitative tests only. Quantitative assessments are more revealing, but while the practitioner was exclusively concerned with the diagnosis and treatment of illness, little progress was made towards replacing impressions by observations of mathematical and statistical accuracy. Since the war, however, an increasing number of general practitioners have been analysing their work objectively in an attempt to extract quantitative figures for disease from the clinical material of which they are the sole observers.

From the surgery chair the general practitioner can watch the different aspects of morbidity in his practice. The number of first consultations for a new condition (patient consulting rate) will indicate the incidence and prevalence of different kinds of illness, while the average number of consultations (consultation rate) for a given disease gives a rough measure of the severity of its impact on the patient. Little or nothing is known of the influence of age, of sex or of geographical locality on these rates, but the general practitioner can relate their rates to the age of his patients, to sex, to occupation or to the seasons, and search for relationships which may be unsuspected and only discoverable by examination of the sum of many observations. At first different workers adopted different methods of recording in studies in their own practice. Some used ledgers or day-sheets whilst others adapted punch-cards for the purpose, and it was impossible to compare material collected in one practice with that derived from another. Logan (2) first devised means for collecting statistical information from a number of different practices, and analysing it accurately. His experience with ten general practices laid the foundations for the larger study with which this volume is concerned.

Many difficulties were encountered by singlehanded and grouped observers recording their diagnoses in observational studies of their practices. It was found, for example, that there are a number of levels of diagnostic accuracy, and that each general practitioner uses by habit working diagnoses that may not fit accurately into categories designed by others. Furthermore, not all patients who consult him do so directly on account of illness. Some attend for an administrative reason, such as the need for a medical certificate of recovery, in which the past illness is secondary, and often very difficult to define. Differences of terminology are widespread among general practitioners whose tradition of work in comparative isolation has led them to form habits of diagnostic thought not easily altered or readily adaptable.

The College of General Practitioners was particularly concerned to measure the prevalence and incidence of illness in the community while it was laying the foundation of its own research organisation. With many possible paths of development open, it sought to find which might be followed most profitably. The General Register Office had felt that information derived from records of mortality was insufficient for present needs, and that other sources - hospital records and medical certificates collected for administrative purposes - give an inadequate picture. With so much common need it was soon clear that a joint study was desirable, and discussion soon showed that this was practicable. The College offered to provide the observers and the raw material for statistical analysis and the General Register Office was ready to supply the skilled statistical workers and to process the findings of the survey.

Many of the problems concerned in the widespread application of the statistical method to general practice were new, and had to be dealt with as

they arose; few could be predicted with accuracy. The joint planning committee had to obtain a network of practitioner observers distributed in a representative fashion throughout England and Wales, and to devise means whereby information could be recorded by these observers and transmitted to a centre for analysis. Decisions had to be made on what was to be recorded, for how long, and whether or not observing doctors would be called upon to restrict their diagnostic terminology or usage in any way. Whether measurement of duration of episodes of illness was to be attempted, or particular attention be paid to particular diseases or aspects of disease – all these problems were faced in turn, and many sacrifices were made on the altar of simplicity, often with considerable reluctance.

In its final form the study was based on identification of an individual by sex and age, and the relation to that individual of all the items of service occasioned by his illness, through a period of one year. Complete freedom of diagnostic terminology was given to the doctors making the field observations, whose records in their own terms were later coded according to the International Statistical Classification of Diseases, Injuries, and Causes of Death by the staff of the General Register Office. Superimposed on this basic study was a further investigation by a majority of the doctors taking part who recorded also the occupations of the patients to whom the diagnoses related.

It was felt that, given the above material, many of the questions which both partners wished to ask would be answered, and a schedule of tabulations was prepared relating the information accumulated to the practice in which it was collected, to geographical location, to age and sex of patients concerned and to other factors as well. The schedule was considered and agreed as one of a large number of permutations and combinations made possible by the material collected, strictly limited though this had been. The tabulations are those which, matched to the information provided by the doctors, appear in Volume I in this series.

In its tabulated form the information is of maximum value to the statistician, the epidemiologist and the administrator, while the clinician and the practitioner may find the mathematical presentation less easily comprehensible than the more familiar narrative. It is for the reader to whom the language of mathematics is strange that this volume is written. General practitioners who themselves took part either in the planning of the survey or collection of material have taken sections of the tables and tried to translate them into more familiar terms. This has been no easy task, and if the clinical interpretation of the tables appears uneven to the reader it will be because each chapter is but one of many possible interpretations. It will be influenced by the experience of the writer and will reflect his personality and habits of practice. It must to some extent be personal. The object of this book is to introduce the reader to the various patterns of disease in general practice, patterns which have never been demonstrated on such a scale before in any part of the world. If this clinical volume achieves this introduction, those who have contributed to it will be well content.

REFERENCES

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CHAPTER I

METHODS

Dr. D. L. Crombie

This chapter is largely a condensation of the account given in Volume I of this series to which readers wishing more detail should refer.

Until recently, research in general practice could be said to be concerned with the problems more usually encountered in hospital practice and to use methods more suited to the hospital environment. It is, therefore, surprising that any worthwhile results were achieved in general practice at all. One has only to mention the name of Mackenzie, however, to demonstrate that exceptional minds could triumph even in these conditions.

Epidemiology, however, has always presented some problems which can be more readily appreciated from the viewpoint of general practice and it is here that the names of general practitioners like Jenner, Snow and Pickles are found. The methods used by these earlier workers were primarily based on acute observation, the ability to perceive the relationship between apparently unrelated events, and above all the drive to transmit the results of these observations and perceptions into useful action.

These first essays in research were by individuals and the first attempt at collective research by general practitioners was initiated by John Fothergill in 1775 (1). Later the B.M.A. (2) began research studies which were mainly concerned with epidemiology, including an investigation to determine whether or not tuberculosis was an infectious disease. This early and promising research movement ceased for various reasons after about five years.

The introduction of new research methods, together with the development of the science of statistics, has put collective research by general practitioners on a firmer footing.

Before the study carried out by the General Register Office of ten general practitioners' clinical records between 1951-54 (3), practitioners such as Pickles had already shown the value of systematic observation, recording and analysis of the day to day work of a single general practice. Morbidity had been studied by individual practitioners in their own practices. (McGregor, 1950 (4), Pinsent, 1950 (5), Fry, 1952 (6), Horder, J., and Horder, E., 1954 (7)). Pemberton, in 1949 (8), reported a study of morbidity limited to one summer and one winter week, carried out by several practitioners. Outside this country, the Washington Sickness Survey was the most comprehensive Survey of morbidity at general practitioner level which had previously been conducted. A further Survey was based on the illnesses encountered during one week by more than 1,000 practitioners in North Carolina (Osler L. Peterson et al., 1956 (9)), but the General Register Office study was the first attempt to collate records from a number of practices over a considerable period of time.

In November 1953, at a meeting of representatives of the College and the General Register Office, agreement was reached on the conduct of a large-scale statistical study of general practitioners' clinical records, and on the respective parts to be played by the two bodies. This community of interest has led to a close and fruitful partnership; the study reflects the joint efforts of the two bodies throughout, it owes much to the support of the Ministry of Health and to the advice and encouragement of the Registrar General's Advisory Committee on Medical Nomenclature and Statistics.

Until recent years knowledge of the prevalence and incidence of disease was inferred from statistics of mortality, and the notification of infectious diseases provided the only direct information about morbidity on a national level.

A considerable amount is known statistically about illnesses seen in hospital. There are also those minor aberrations from normal health for which patients seek no medical advice. The Survey of Sickness, 1943-52 (10), tried to establish the pattern of morbidity by collecting information at this level. Backett, 1953 (11), also describes the results of a Survey carried out in a general practice, with the help of a Health Visitor, where this background to the morbidity seen by the general practitioner was evaluated.

Analysis of the National Insurance medical certificates of incapacity gives information about morbidity in the insured working population.

The great effort involved in the analysis of the morbidity encountered by individual general practitioners in their own practices has limited the amount of published work on morbidity. The collaboration between practitioner and statistical department has made this, the first large-scale morbidity Survey, possible. (The methods used in this Survey were based on those used by the General Register Office in the study carried out between 1951 and 1954.)

At each stage of the Survey an informal working party of representatives of the College and the General Register Office formulated policy and settled major questions of application. Detailed proposals were then drawn up by the General Register Office and submitted to the College for observations and criticism. The executive work of organisation and administration was carried out by the General Register Office, which was also responsible for the tabulation and statistical analysis of the results. The College provided the recording practices from its Research Register and helped to maintain the standard of recording throughout the study. The Survey owes most to the doctors who took part in it. For many of them it offered little of immediate personal interest and their participation arose from their desire to contribute to a community project for the general good. Participation entailed much additional work, loss of leisure time, submission to a central discipline and sustained active co-operation over a period of twelve months for no reward other than the satisfaction of having helped. That doctors did undertake and carry out these commitments is a tribute to them, both as doctors and citizens.

A list of Principals and Qualified Assistants who took part in the Survey is shown in Appendix I.

Twelve months was agreed to be the period over which information should be collected. A Survey starting in May 1955 and ending April 1956, covering one complete winter and one complete summer, was considered more suitable than a calendar year. There were no major epidemics during the Survey period, the winter weather was generally mild and the general opinion of practitioners taking part was that the Survey year was typical of a quiet year.

It was decided at an early date that every consultation given by the practitioners to their patients during the period of the Survey, should be recorded with the minimum of detail. It was thought that personal visits by the staff of the central office to every doctor taking part would not be practicable and the success of the Survey would depend on the clarity of the written instructions. Since brevity was essential, many interesting (and worthwhile) additional lines of research, such as family studies, duration of illness, incapacity and the importance of stress disorders, had to be excluded. The inform-

ation the practitioner was eventually required to record for each of his patients was:

- (i) Sex
- (ii) Date of birth or age
- (iii) Diagnosis and dates of consultation
- (iv) Admission to hospital.

The Survey was limited to National Health Service patients and the small minority of private patients and temporary residents were excluded.

The number of practices to take part in this Survey depended partly on the number of doctors who would be prepared to participate and partly on the quantity of material which the clerical staff at the General Register Office could handle. In the event, 171 practitioners in 106 practices took part. It was appreciated that the practitioners taking part, being volunteers and willing to undertake extra work because of their interest in general practitioner research, were unlikely to be truly representative of all general practitioners. There seemed no reason to believe, however, that their patients would be so unrepresentative.

Of the 246 practitioners who replied to the initial invitation to members of the College Research Register in April 1954, expressing themselves interested in the Survey or willing to take part, 48 withdrew because of ill-health, change in practice circumstances or following second thoughts on the amount of work involved. The 246 practitioners had been asked to complete a questionnaire on the situation, organisation and circumstances of their practices as it was fundamental to the study that the information collected could be related to a known population. This was automatic in the case of single-handed practices and partnerships in which all partners were willing to take part. In a few partnerships where there was a clear division of patients between partners, these practitioners could also participate in the Survey. Twenty-seven practices had to be excluded because records could not be related to a known population. The actual number of doctors who were willing and able to take part was not finally known until just before the start of the Survey year. The selection of practices to establish geographical representation therefore took second place to the necessity to provide the largest possible total coverage, though it was agreed that 100 practices was the optimum if the geographical distribution was satisfactory. In order to improve representation, volunteering was encouraged in some areas, not encouraged in others, and in the event a fairly good geographical representation was achieved. All practices found suitable, with the exception of two late volunteers in already over-represented regions, were therefore accepted and altogether 171 practitioners in 106 practices took part in the Survey.

Following the conduct of a pilot Survey lasting a fortnight in seven of the participating practices, several amendments were made to the layout of the draft record card and to the draft instructions, and a further week's trial held in all practices shortly before the start of the Survey led to further minor amendments to the recording instructions.

The proper drafting of instructions is essential to the success of an enquiry of this kind where close supervision of field work is impossible and where answers to queries cannot be given immediately. A document had to be prepared for the Survey which would be easily understood at first or second reading and which would contain sufficient detail to answer queries as they arose. A general practitioner has little time to consult a set of voluminous notes whenever he sees a patient and the instructions had to be clear and to the point. At least a dozen drafts were produced by members of the College and the General Register Office and amended, amalgamated,

abandoned or improved before the final instructions were evolved. This was by no means time wasted.

A running check was kept on the standard of recording by the examination of the medical record envelopes of patients leaving the practices. By special arrangement, these were sent to the General Register Office. Few errors were noted and these were nearly all of a minor nature. These records also allowed an estimate of the change-over of patients in each practice during the Survey year.

Only two practitioners withdrew from the Survey because of the work involved and in both instances partners remaining in the Survey were able to carry on recording for a reduced list of patients.

Difficulties which could not be resolved arose only in five practices. In three, discrepancies in the records were found, and in the other two, a satisfactory estimate of the practice population could not be made. The interest of the doctor in the study was maintained by reports on the progress of the Survey from time to time, and by the visits of officers of the General Register Office. Altogether 83 of the 106 were visited at some time or other. Every opportunity was taken to bring the doctors together to discuss the Survey.

Although the study of morbidity in relation to occupation was made a separate part of the Survey, about three-quarters of the practitioners volunteered to undertake this additional work. It entailed the recording of the occupation of all patients in the practice population in order that sickness experience could be related to the "at risk" population. Since only 60 to 70 per cent of the patients consult their doctors in any one year, much extra work was thrown on these practitioners in completing this section. The results of this study have been published in Volume II of this series.

The medical record envelope which practitioners hold for each of their National Health Service patients carried the patient's name and address, National Health Service number and sometimes the date of birth. Space is also provided for clinical notes and the envelope usually contains hospital notes, correspondence, specialists' reports and continuation cards. There is no obligatory form of note keeping, and there are as many recording systems as there are general practitioners. Such variety precludes the conduct of collective investigations based solely on the practitioners' records. For such a purpose a specially designed card, whose completion is based on standard definitions and procedures, is necessary.

The special Survey record card, reproduced below, was used by all the practitioners taking part. When the practitioner had used the Survey card as the only medical record, the Survey cards were returned to the doctors after processing.

The card was designed to fit easily into the medical record envelope, but to protrude sufficiently to make its presence obvious. The black edge distinguished it from continuation cards. The reverse of the card provided a further eight lines of diagnosis, date and admission columns.

When a patient consulted his doctor for the first time during the Survey year the doctor entered the disease or condition diagnosed on the first line of the card and the date of the consultation in the first date-box on that line; subsequent consultations for the same condition were entered in the following date-boxes. If the patient was suffering from more than one disease at the same time, each diagnosis was entered on a separate line, the date inserted against each and the dates ringed to show that the diseases had been diagnosed on the same occasion. Subsequent different diseases for which the patient consulted were entered on new lines and dates of consultations inserted

as usual. Fresh episodes of the same illness were not, however, distinguished but consultation dates continued on the same line. The patient with colds in November and April, for example, would be recorded as "Coryza 7. 11/3.4". Any admission to hospital was noted by a tick in the "admission" column against the condition necessitating the admission.

MORBIDITY SURVEY: COLLEGE OF GENERAL PRACTITIONERS—GENERAL REGISTER OFFICE

Surname _____ Forenames _____

Address _____ Sex _____ Date of birth _____ or Age _____

Occupation _____ Industry _____
(Enter father's occupation for children under 15).

	Diagnosis	*	Date of consultation					Admission
1								†
2								†
3								†
4								†

* To link altered or continued diagnoses enter new line number in box (see instructions).

† Insert a tick in this column for any stay in hospital (whether or not arranged by you).

The smaller boxes in the space for diagnosis served a double purpose as indicated in the footnote to the card. Firstly, doctors linked lines where more than one line of date-boxes was used for the same condition and, secondly, indicated amended or changed diagnoses.

An example of the first use is:

1.	Chronic Bronchitis	4	8/6/55	15/6	2/9	8/9	16/9	+
2.	Sprain left ankle		23/7	27/7	1/8			+
3.	Cellulitis of finger		11/8	16/8				+
4.	Chronic Bronchitis		3/12	17/12	2/1	9/1		+

and, of the second use:-

1.	Acute Tonsillitis		12/10/55	14/10	18/10			+
2.	Dyspepsia	4	4/11	7/11				+
3.	Coryza		1/12	5/12				+
4.	Gastric Ulcer		7/12	18/12				+

In this case the two consultations recorded on line 2 would be counted as consultations for gastric ulcer and added to those recorded on line 4.

The instructions for the completion of the Survey card were designed to promote a uniform standard of recording.

At each consultation given to their National Health Service patients, excluding private patients and temporary residents treated under the National Health Service, practitioners were asked to record the date and diagnosis made. A consultation was defined, for the purpose of the Survey, as: "Any occasion when a patient attends for medical treatment or advice at the general practitioner's surgery, whether during general surgery hours or by appointment, or when the general practitioner visits the patient to give treatment or advice elsewhere." This excludes all non-medical consultations, such as giving references as to character, but also excludes indirect medical consultations by letter, telephone or through a third party. The latter consultations, while important in the measurement of morbidity, have to be excluded from the Survey because these consultations usually occur at a time or place where it is inconvenient or impossible to refer to the Survey card. These indirect consultations, of course, vary enormously from one practice to another.

Numbers of consultations given to patients in a practice will also vary with other aspects of practice organisation and circumstances. Numbers of patients consulting offer a more practical measure of morbidity.

The diagnosis to be recorded was defined as "any disease(s) or condition(s) treated or advised on at a consultation". Any number of diagnoses could be entered for a particular consultation, provided that each disease was relevant to that consultation. Practitioners were asked not to record chronic or incidental conditions from which the patient was known to be suffering if the consultation was not concerned with them. For provisional diagnoses, practitioners were asked to give also the chief symptom, e.g. abdominal pain - ? gastric ulcer. If, later, a firm diagnosis could be made, the provisional diagnosis was either amended or confirmed by striking out the symptom. If, for any reason, a firm diagnosis was not made, the symptom was taken in processing and tabulating as the condition causing the consultation.

A hospital admission was defined as "any overnight stay in hospital, or attendance during the day in which the patient occupied a ward bed". The word "hospital" was interpreted fairly broadly and subsidiary definitions instructed the practitioner to count admissions to maternity homes where the patient passed out of his care, or admissions to private nursing homes even when remaining under the practitioner's care, if for reasons which would otherwise have necessitated admission to a hospital.

Only the emergency admission of a patient is arranged directly by his own practitioner. More often the admission follows a consultation by the patient with a specialist. In these instances, practitioners were asked to enter the admission on the Survey card as soon as they became aware of it. This was usually after the patient had been discharged from hospital. Where these preliminary consultations with the practitioner and specialist had taken place before the Survey year began but where the patient was admitted to hospital during the course of the Survey, for instance for tonsillectomy, and where the patient might not need to consult his family doctor after discharge from the hospital, his Survey card would not contain any mention of the tonsil condition. These "non-consulting admissions" were covered by the insertion of the diagnosis with the word "no" in the first date-box and a tick in the admission box.

At the end of the Survey year, practitioners withdrew the Survey record cards from their medical record envelopes and sent them to the General Register Office. The cards for each practice, together with the cards for patients leaving the practice which had been sent in during the Survey year, were then coded by General Register Office staff. Practitioners could, if they wished, have their cards returned to them, either to continue recording

in this form or for their own interest. Cards for 50 practices were returned, 37 for interest and 13 to continue recording.

The major coding task was the conversion of diagnoses into the numerical categories of the International Statistical Classification of Diseases, Injuries, and Causes of Death. Apart from the volume of the work (more than 500,000 diagnoses were dealt with), the coding of general practitioners' records presents problems not usually met in medical statistical enquiries. In most enquiries the diagnosis is made for each person concerned at a particular point of time, e.g. at the time of hospital admission or discharge, or at the time of death, whereas general practitioners' records consist of a series of diagnoses. Difficulty arises when the separate diagnoses are related, either obviously or apparently. It would be logical to group together related conditions into a single summary diagnosis, as in effect happens in enquiries concerned with one particular point of time, but this is not possible without detailed knowledge of each case. A machine card was punched from the coded data for each separately coded condition and the cards sorted and counted on conventional punched-card machine equipment.

The tabulations in all three volumes of this Study are a selection of the data which could have been produced: time, and the need to produce a report of manageable length limiting the extent of the analysis.

The consultation and the reason for it are the basic items of information in general practice records. The patient's complaint is assessed and treated and an entry made in the practice records. Upon the two items of information, consultation and a diagnosis, are based all the tabulations in this study. In considering the results of this Survey it must always be borne in mind, for the reasons given in Volume I of this publication, that patients in general practice are often effectively treated without the necessity of establishing a scientific diagnosis. In this Survey a "diagnosis" was always entered on the record card.

As a measure of morbidity, consultations can be expressed as totals for all the patients participating, or for the different sexes, age groups, regions and so on. They can be related to the diseases causing them. Alternatively, by counting only the first consultations given to each patient, the total number of such persons can be obtained or, by counting the first consultations for each disease, the number of patients suffering from each is given. Finally, the frequency with which different sections of the population seek medical attention can be assessed from the numbers of consultations given each patient.

Various methods of counting consultations have been used in producing the tables in this study but the two most important are the numbers of total consultations and of first consultations for all and for separate diseases, the latter being expressed as "patients consulting". In the Survey, no distinction has been made between separate attacks of the same illness on the patient. Thus a patient with two attacks of acute bronchitis during the year has been counted as one patient consulting for acute bronchitis. The difficulties of drawing up workable definitions to cover this contingency were so great that the differentiation between separate attacks or episodes of the same illness was not undertaken.

Consultation rates vary with practice circumstances and organisations, though the combined consultation rates for the 106 Survey practices are probably fairly representative of general practice as a whole. These rates, in this Survey, exclude indirect consultations, and do not, therefore, show the total amount of service given by the practitioners to their patients. A more satisfactory measure of morbidity is given by the patient consulting rates. These are affected by practice circumstances to a smaller extent than

consultation rates, although patients may not consult quite so readily for minor conditions in areas where surgery attendance involves a long and perhaps inconvenient journey.

In the Survey, rates have been related usually to the population at risk but also to the numbers of patients consulting and the number of consultations.

It must never be forgotten that the most important function of the general practitioner is to help his patients with the management of their problems. Often and nearly always where the condition is serious, an accurate diagnosis can be established as part of the process of management. Accuracy in this context means the use of a diagnostic label which would be applied without variation by different practitioners in the same circumstances. In the management of the minor or more common problems met in general practice the establishment of a formal diagnosis may be either impossible or unnecessary. It is probable that the majority of these latter conditions will be classified in what might be called the "rag-bags" of the International Classification of Diseases.

Practitioners were asked to record each disease or condition with which a consultation was concerned. In tabulation by diseases and conditions, each disease or condition recorded has been counted separately but for total numbers without reference to disease only the one consultation has been counted. Numbers of consultations for separate diseases, therefore, add up to more than the actual number.

In the present volume there are in fact a number of places where diseases have been grouped by adding together the separate rates for the components of the group. Where this has been done the rates may be over-stated, but it seems unlikely that this would be sufficient to have a material effect on comparisons within the disease group, e.g. between ages or occupations.

The method of determining practice populations was governed by practical considerations. The total number of patients in each practice was known from Executive Council counts, but for details of sex and age recourse to the practitioner's files of medical record envelopes was necessary. This counting was a tiresome clerical job which practitioners undertook willingly, if not always cheerfully, and although in many practices secretaries, wives and children were pressed into service on occasion, it added to the everyday work of running a practice. Although the size of a practitioner's list varies from time to time, it was necessary for the purpose of the Survey to represent the population of a practice by a single figure. This figure was based on the count made by the practitioner. Where there were gross discrepancies between this figure and the number of patients credited to that practitioner by the Local Executive Council, or where the practitioner's list varied considerably from one part of the Survey to the other, then the final estimate took into account all these factors.

The average practice rate of patients leaving was 8 per cent. The rate ranged from 3 to 18 per cent. This, coupled with the average increase of just over one per cent in the population at risk during the course of the Survey, means that the average practitioner in the Survey cared for about 1,090 patients at some time or other during the year for every thousand patients on his list at any one time.

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RESPIRATORY DISEASES

Dr. John Fry

The family doctor in Great Britain has every opportunity to become expert in the management of the common respiratory disorders, for these conditions account for over one-quarter of his entire work.

Incidence

In the year of the Survey some 26 per cent of all individuals at risk in all the practices were seen on one or more occasion for some respiratory disorder. In other words 23 per cent of all consultations were for these infections (the proportions were even higher if allergic and E.N.T. conditions are included).

Compared with other disease-groups, respiratory tract conditions are more than twice as frequent as the next largest group - thus C.N.S. conditions affected 12 per cent of all those at risk, digestive disorders 11 per cent, skin ailments 11 per cent and accidents 10 per cent.

This incidence of respiratory disorders varied with certain factors.

Age distribution of respiratory diseases

	All ages	0-	5-	15-	45-	85 and over
Consultation rates per 1,000 at risk	880	1,534	921	645	908	1,170
Patient consulting rates per 1,000 at risk	264	497	329	231	230	240
Average numbers of consultations per patient consulting for respiratory illness	3.3	3.1	2.8	2.8	3.9	4.9

It is clear that the respiratory tract was most often affected in the young and the old. In the first five years of life almost one-half of all the children in the practices were seen by the doctor at least once during the year for a respiratory infection, and each of these children was seen on an average three times. The incidence rate fell by almost one-half in the next decade. It has not been possible to subdivide this age group into separate single year periods but the work of Fry (1), Cook (2) and Dingle (3) has shown that the peak levels of incidence are between 4 and 8 years of age, and this is further corroborated in Chapter 10 on children's ailments.

There would seem, therefore, to be a natural tendency for respiratory illnesses to be most frequent in children up to 8 and after this the incidence seems to fall and reach a fairly constant level.

As the older age groups were approached it was interesting to note that although the proportions of patients who consulted their doctors did not increase, the numbers of consultations increased with age. In other words there was no real increase in the incidence of respiratory disease in individual patients. Those who were affected attended more frequently as they became older.

Sex

The patient consulting rate shows a female predominance up to 45 and the reverse thereafter.

Geographical distribution

The consultation rates for respiratory disorders differed quite markedly in different areas. The highest rates were recorded in urban districts (950 per 1,000 at risk), followed by the semi-urban (793 per 1,000) and then the rural (769 per 1,000). The male preponderance was particularly noticeable in the urban areas.

Taking the average consultation rate as 880 per 1,000 at risk those regions with a higher than average rate were the South West, Wales, the East and West Ridings, the North West and the Midlands, whilst those with a low rate were the East, North and South. Similar trends were noted in the rates of individual patients. The constitution of the standard regions is given in Appendix IV.

CLASSIFICATION AND NOMENCLATURE

It is notoriously difficult to devise any really satisfactory method of classifying and naming the various respiratory infections. These difficulties are basically due to a lack of knowledge of the aetiologies and clinical differentiations. As examples of the difficulties, we have the situations where one causal agent may produce a whole variety of differing clinical conditions and, alternatively, one clinical condition may result from a whole variety of causes.

Added to these technical difficulties are the more mundane problems of doctors' individual customs, which differ greatly, and we have many diagnostic labels that can apply to one and the same condition. There are, for instance, more than 100 synonyms for infections of the lungs.

For these reasons it was thought suitable to consider the various respiratory conditions under a number of broad groups rather than try and pick out pseudo-specific diagnoses.

Although it may seem artificial to endeavour to break up the tract into its various anatomical components, for it is functionally a continuous and closely related system, for practical reasons it is far easier to do so. For our purposes the respiratory tract has been divided into upper and lower divisions.

Upper respiratory infections included three large sub-groups:

- (a) acute common respiratory infections such as common colds, acute naso-pharyngitis, acute respiratory infections, acute sinusitis and acute laryngitis.
- (b) acute sore throats were considered as a separate group as it has been shown by Cruickshank (4), Fry (5) and Hope Simpson (6) that these conditions have certain features that distinguish them from other respiratory infections. The seasonal pattern is different in that the incidence is fairly constant with no significant frequency in the winter. The age incidence also differs in that it is common in young adults and in many cases a definite bacteriological cause can be detected.
- (c) Influenza as a diagnosis is probably accurate in epidemic periods but tends to be aetiologically inaccurate during inter-epidemic times. There were no widespread epidemics in 1955/56. Although influenza essentially is a generalised whole-body disease, it is most conveniently discussed here.

Lower respiratory infections were divided into acute and chronic groups:

- (a) acute chest infections included pleurisy, acute bronchitis and the pneumonias;
- (b) chronic chest conditions included chronic bronchitis, "bronchitis", emphysema, bronchiectasis and pneumoconiosis.

Other groups were: pulmonary tuberculosis, carcinoma of the lung, ear conditions, allergy and symptomatic diagnoses.

It is proposed to examine these groups separately noting the incidence and the effects upon it of age, sex, regions, seasons and social and occupational influences.

UPPER RESPIRATORY INFECTIONS

Acute common respiratory infections

This is by far the largest group of conditions that the British family doctor encounters. During the year of this study nearly 12 per cent of patients at risk consulted the doctors for this reason. The group consisted of a mass of minor, but far from trivial, conditions in which as always the diagnosis and management were most perplexing to the doctors. It is very possible that this group was in fact composed of a number of different specific conditions which at present could be readily separated by clinical or pathological means.

Age distribution of acute common respiratory infections

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	238	714	284	192	194	166
Patient consulting rates per 1,000 at risk	116	323	145	100	90	77

There was a characteristic age pattern in these common conditions. They were very much more frequent in young children. Others already referred to have shown that there is a definite peak at 4 to 8 years. This trend is not evident here because there has been no fine distinction of age groups. With age there was a progressive decline in the incidence of the common coughs, colds and catarrhs. At ages under 85, females were more involved than males.

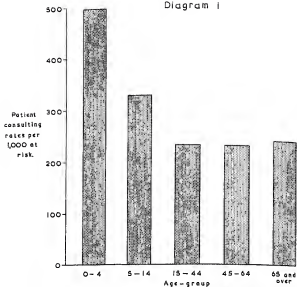
Regionally a definite increase in incidence was noted in urban areas as compared with rural areas. The semi-urban practices occupied an intermediate position. The South Western, Midland, London and South Eastern, and North Western Regions had figures well above the average whereas the East, South and North had the lowest rates.

Seasonally, as might be expected, the winter months were the times of greatest incidence.

Social classes and occupations

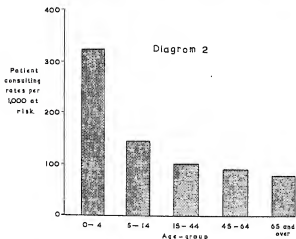
As far as occupations (males aged 15-64) were concerned the highest incidence of the common respiratory infections were found in the four occupational orders covering mining and quarrying, unskilled occupations, workers in metal

Diagram 1



Age distribution of respiratory diseases.
Patient consulting rates per thousand at risk.

Diagram 2



Age distribution of acute common respiratory infections.
Patient consulting rates per thousand at risk.

manufacture and engineering, and clerks, typists, etc. The significance of this is rather indefinite - but the very high rates in mine-workers, three times that of the others, might be related to their needs for certificates of absence.

There was a tendency for these common upper respiratory infections to be more prevalent in the lower social groups.

In children up to the age of 15 the table shows an interesting situation. The higher prevalence rates were not in Social Class V but in Class III. This was so in all the three age groups in children.

Age and social class distribution of children with acute common respiratory infections - patient consulting rates per 1,000 at risk

Age	All Social Classes	I	II	III	IV	V
0-14	192	186	174	204	190	180
under 1	288	150	232	320	289	294
1-4	273	219	256	288	271	255
5-14	148	145	136	155	149	135

In males aged 15-64, the prevalence of these infections, as evident by the numbers of patients attending, was also highest in the middle Social Class III; the consultation rates, however, were highest in Social Class V, suggesting that these persons attended more frequently for the same illnesses. The constitution of the Social Classes is given in Appendix V.

Social class distribution of acute common respiratory infections. Males aged 15-64

	All Social Classes	I	II	III	IV	V
Consultation rates per 1,000 at risk	148	114	106	153	157	170
Patient consulting rates per 1,000 at risk	68	60	53	73	71	72

Acute sore throat

Acute infections of the throat are frequent in general practice. The average general practitioner must expect to see some 150 cases each year (the prevalence rate being 64 per 1,000). These infections differed in certain respects from other acute upper respiratory infections. They were relatively more frequent in young adults and there were no great seasonal swings.

Age distribution of acute sore throat

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	147	251	306	156	70	31
Patient consulting rates per 1,000 at risk	65	103	135	69	32	15

Here again we can see the highest incidence in children and young adults with very low rates in the elderly, in fact only 3 per cent of those over 65 were seen for a streptococcal throat.

No notable regional differences were apparent. Socially, in children up to the age of 15, acute sore throats were most frequent in Social Class III.

Age and social class distribution of children with acute sore throat - patient consulting rates per 1,000 at risk

Age	All Social Classes	I	II	III	IV	V
0-14	123	114	111	131	118	113
under 1	21	16	28	18	19	27
1-4	111	88	97	122	98	108
5-14	140	137	125	149	135	126

In males aged 15-64, acute sore throats appeared most prevalent in Social Class I. whilst most attendances were made by Social Class IV.

Social class distribution of acute sore throat
Males aged 15-64

	All Social Classes	I	II	III	IV	V
Consultation rates per 1,000 at risk	113	118	91	117	127	106
Patient consulting rates per 1,000 at risk	47	52	40	50	49	40

Influenza

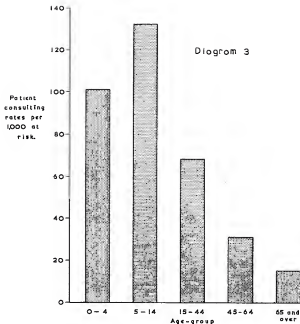
The incidence of influenza varies from year to year and the period under review was not an epidemic year so that many of the cases so diagnosed may not in fact have been true influenza.

Age distribution of influenza

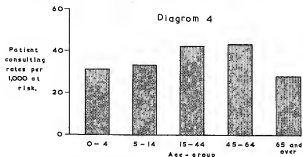
	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	113	80	79	115	141	106
Patient consulting rates per 1,000 at risk	38	31	33	42	43	28

The different age pattern is interesting in that the highest rates were in adults.

The maximal patient consulting rates were noted in Wales and the South Western Region where the rates were twice that of the London and South Eastern Region. There were few real social differences in the incidence of influenza.



Age distribution of acute sore throats.
Patient consulting rates per thousand at risk.



Age distribution of influenza.
Patient consulting rates per thousand at risk.

LOWER RESPIRATORY INFECTIONS

Acute chest infections

The acute infections of the lungs and bronchi are an important group of conditions in general practice. If we include cases of acute bronchitis, pleurisy and pneumonia, the average practitioner must see between 50 and 100 cases every year, enough to give him very wide experience in their diagnosis and treatment. Difficulties still exist over aetiology and nomenclature but here we have limited the group to the three diagnoses - acute bronchitis, pleurisy and pneumonia.

Age distribution of acute chest infections

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk						
Pneumonia	38	53	25	18	45	96
Acute bronchitis	60	144	44	25	69	126
Pleurisy	7	0.2	1	6	10	15
Total	105	197	70	49	124	237
Patient consulting rates per 1,000 at risk						
Pneumonia	6	12	5	3	6	13
Acute bronchitis	17	44	15	9	18	27
Pleurisy	1	0	0	1	2	2
Total	24	56	20	13	26	42

It seems that it was in the very young and the very old that these acute pulmonary infections were most prevalent and this offers room for speculation and research as to the reasons.

In the study by the College of General Practitioners (7) on acute chest infections similar findings were obtained with a total incidence for patients of 18 per 1,000 at risk.

Regional distribution

The variations of incidence in the various regions were less marked than might have been expected. There were no real differences with the size of the regional population, the rates being similar in large cities and in small towns. The rate was a little higher in urban areas (26 per 1,000) compared with that in rural areas (21 per 1,000).

When individual regions were compared there were some differences. With the average rate of 24 per 1,000, the lowest rates were found in the Northern and Eastern Regions (9 per 1,000 and 13 per 1,000) and the highest in the East and West Ridings (34 per 1,000).

Social influences

In males aged 15-64, there appeared to be some variation of the incidence of acute chest infections with the social class. Tables show that the consultation rate and the rate of individual patients affected both increased inversely with

the social class. This increase was not very striking with the individual rates but more so when the consultation rates were studied. Another interesting point was that the average numbers of consultations per patient consulting for pneumonia and acute bronchitis were much higher in Social Class V (8 and 5 respectively), than in Social Class I (5 for pneumonias and 3 for acute bronchitics).

Social class distribution of acute chest infections
Males aged 15-64

	All Social Classes	I	II	III	IV	V
Consultation rates per 1,000 at risk						
Pneumonia	34	15	23	32	44	49
Acute bronchitis	46	26	42	43	49	70
Patient consulting rates per 1,000 at risk						
Pneumonia	4	3	4	4	5	6
Acute bronchitis	12	9	12	11	11	15

In children (0-14) there were some rather interesting trends. The tables below show the proportion per 1,000 of children at risk with pneumonia and bronchitis.

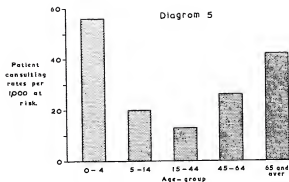
In pneumonia there were rather surprisingly small differences between the incidence in children in the various social classes. In bronchitis there did seem to be a very definite rise in incidence of the condition with a fall in the social class. This trend was very much more apparent in infants and young pre-school children under 5 than in school children.

Age and social class distribution of children suffering from pneumonia -
patient consulting rates per 1,000 at risk

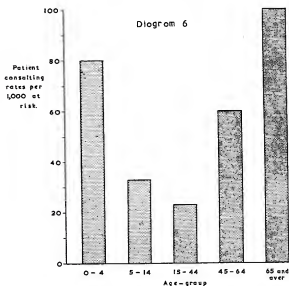
Age	All Social Classes	I	II	III	IV	V
0-14	7	5	7	7	7	5
under 1	11	-	9	12	14	10
1-4	9	10	8	9	11	10
5-14	5	4	6	5	5	3

Age and social class distribution of children suffering from bronchitis
(acute and chronic) - patient consulting rates per 1,000 at risk

Age	All Social Classes	I	II	III	IV	V
0-14	69	46	55	76	65	81
under 1	120	45	80	129	145	162
1-4	105	68	82	114	101	127
5-14	49	37	42	54	42	53



Age distribution of acute chest infections.
 Patient consulting rates per thousand at risk.



Age distribution of chronic chest conditions.
 Patient consulting rates per thousand at risk.

Chronic chest conditions

Chronic bronchitis has been labelled as the "English Disease" and it seems that chronic infections of the chest are much more frequent in the British Isles than elsewhere. The reasons for this are still far from certain, but climatic conditions must play an important part. For, in addition to the extreme climatic changes, atmospheric pollution is very high in this small and thickly populated industrial island.

For ease of description and discussion the chronic chest conditions have been grouped together, but it must be appreciated that in this grouping different aetiological states might be grouped together. Those included have been chronic bronchitis, bronchitis (all except acute), emphysema and bronchiectasis (this accounted for less than 1 per cent).

Age and sex distribution of chronic chest conditions

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk						
Males	268	242	89	68	470	822
Females	166	195	85	74	194	436
Persons	214	219	87	71	323	590
Patient consulting rates per 1,000 at risk						
Males	53	85	34	21	73	131
Females	43	75	33	26	48	79
Persons	48	80	33	23	60	100

With the proviso that one might in fact be dealing with a number of distinct clinical entities that have been artificially grouped together, certain interesting facts emerge.

The sex differences were very marked in the over 45's, males predominating by almost 2 : 1, whereas in the young groups the sex incidence was fairly equal. It is very likely that we are in fact dealing with at least two very distinct clinical conditions that have from custom and convenience been labelled as "bronchitis". "Bronchitis" in children is undoubtedly a very different state from that in old men. It is possible that some doctors use the label for all persistent coughs in children, and these have a very natural tendency to clear up spontaneously at 8 years of age. The "bronchitis" in old men, on the other hand, usually follows a relentlessly progressive course. There is probably no connection between the two types of "bronchitis", for why should there be this very low rate in the intervening three decades, 15-45? On the other hand it is possible that there are certain individuals, of which there must be only a few, who have an inherent liability to chronic and recurring respiratory infections all through their lives.

It is also of interest to note the varying ratios of consultations to patients at the different ages — indicating the number of times that each patient with chronic chest conditions attends his doctor.

Average number of consultations per patient consulting
for chronic chest conditions

Age	0-	5-	15-	45-	65 and over
C/P	2.7	2.6	3.0	5.4	5.9

This indicates that at ages over 45 these patients attend very much more frequently during the year than those in younger groups.

Regional differences

There were some very marked differences in the rates of chronic chest conditions in the different regions of England and Wales. The rates of incidence are much higher in the conurbations and urban areas with populations from 50,000 to 100,000. The rates are also much higher in urban practices as opposed to those in rural districts.

Distribution of chronic chest conditions by type of practice

	All practices	Urban	Semi-urban	Rural
Consultation rates per 1,000 at risk	214	253	168	149
Patient consulting rates per 1,000 at risk	48	57	38	32

Regionally, London and the South East had the highest patient consulting rates and Wales the lowest.

Social influences

In chronic chest conditions there was a very definite relationship between the consultation rates. The same was true of the patient consulting rates and the social class. There were almost seven times as many consultations for chronic chest conditions in Social Class V as in Social Class I and there were four times as many patients consulting in Social Class V as in Social Class I.

Social class distribution of chronic chest conditions
Males aged 15-64

	All Social Classes	I	II	III	IV	V
Consultation rates per 1,000 at risk	209	63	107	195	262	428
Patient consulting rates per 1,000 at risk	40	16	26	38	51	66

The occupations most liable to chronic chest conditions were miners, unskilled workers and textile workers. The rate was twice as high in manual

workers as in non-manual workers. The lowest rates were in agricultural workers.

EAR CONDITIONS

Great changes have occurred in the patterns of the common ear conditions over the past few decades. Mastoidectomy is now extremely rare and disease of the mastoid is not mentioned separately in the tables. Three main conditions can be picked out for study - otitis externa, otitis media and wax in the external meatus.

Otitis media (without mention of mastoiditis) is essentially a condition of young children and follows a very similar pattern to that of the acute upper respiratory tract infections with the greatest rates in the pre-school and school children.

Age distribution of otitis media without mention of mastoiditis

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	59	246	157	30	19	15
Patient consulting rates per 1,000 at risk	20	86	53	10	6	4

In children the social patterns of acute otitis media really show very little difference in incidence in the various social classes.

Age and social class distribution of children with otitis media without mention of mastoiditis - patient consulting rates per 1,000 at risk

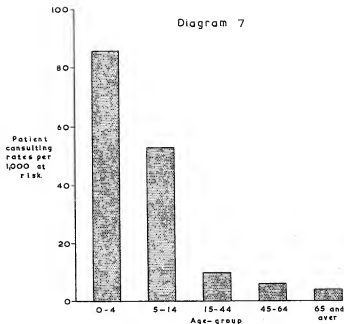
Age	All Social Classes	I	II	III	IV	V
0-14	60	53	61	63	56	49
under 1	45	12	34	47	59	54
1-4	79	69	85	83	71	63
5-14	54	50	55	57	50	42

Otitis externa is quite different, with a much lower and much more even distribution as one would expect for a skin condition.

Age distribution of otitis externa

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	13	12	11	15	14	8
Patient consulting rates per 1,000 at risk	5	7	5	6	5	3

Diagram 7



Age distribution of otitis media without mention of mastoiditis. Patient consulting rates per thousand at risk.

Wax

Removal of wax from the ear is one of those peculiarly general practitioner procedures. The average practitioner apparently has to carry out this manoeuvre almost twice a week. Accumulation of wax is rare in children and amazingly constant in adults and old persons. The procedure of removal of wax is more commonly carried out in the summer than in the winter and it is also of interest that the patients who attended for that condition did so just over once each in the Survey year.

Age distribution of aural wax

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	30	4	10	34	37	39
Patient consulting rates per 1,000 at risk	21	3	7	25	27	27

ALLERGY

The most common allergic conditions, and those that can be most readily defined, are asthma and hay fever.

Whilst hay fever is very easy to distinguish, asthma is far from easy - for not all that wheezes is asthma. For this reason there is bound to be a considerable divergence of opinion over the labelling of "asthma". Some would restrict the term to spasmodic attacks of wheezing unassociated with any chronic infections of the chest, while others would apply the label to wheezing in any condition and include the wheezy old men with chronic bronchitis. There is bound, therefore, to be a diversity of reports on the incidence of asthma, especially among older people.

Age distribution of asthma

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	53	37	43	39	75	69
Patient consulting rates per 1,000 at risk	9	8	10	7	10	9

The incidence of asthma is remarkably low. It occurred in only 1 per cent of those at risk but was responsible for more than 5 per cent of the consultations. The rates at various ages were remarkably similar but it does not follow that all the asthmas are of the same type and aetiology. Again, it is noteworthy that in the younger groups each patient with asthma required about 4 consultations in the year, while in the over 45's the number was over 7. Among children, boys outnumbered girls by 2 : 1, but there was little sex difference in the adult groups.

Age distribution of hay fever

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	13	2	11	22	8	5
Patient consulting rates per 1,000 at risk	5	2	5	8	3	2

There is an apparent peak between the ages of 5-44 and it is suggestive that there might be a tendency for the condition to subside with age.

Surprisingly there were no marked differences in the incidence of asthma and hay fever in urban, semi-urban and rural practices. Hay fever seemed most commonly diagnosed in London and East England and least frequently in Wales and the North. Asthma, on the other hand, was most frequent in Wales and the South West.

There were few real differences in the incidence of asthma in the various social classes. The occupations that appeared most liable to asthma were agricultural workers and those employed in commerce, finance and insurance.

NEW GROWTHS

In spite of all that has been written on the rising incidence of cancer of the lung, it is a comparatively rare condition in general practice with a patient consulting rate of only 0.05 per cent or about 1 per 2,000. In other words, the average family doctor will have about one new case every other year. This is all the more reason why he should be aware of the condition and be prepared to make an early diagnosis.

Age distribution of cancer of lung, bronchus and trachea

	All ages	45-	65 and over
Consultation rates per 1,000 at risk	8	20	24
Patient consulting rates per 1,000 at risk	0.5	1.1	1.6

As in other reports, males outnumbered females by a very large extent. Surprisingly again there were no significant regional variations and the numbers involved were too small to discover any social or occupational trends.

TUBERCULOSIS

Here again we have a common hospital disease that is rare in general practice with a rate of about six patients per average general practitioner in the country as a whole. Males outnumbered females, especially in the older age groups.

Age distribution of tuberculosis of the respiratory system

	All ages	0-	15-	45-	65 and over
Consultation rates per 1,000 at risk	21	2	28	29	17
Patient consulting rates per 1,000 at risk	3	1	4	3	2

HOSPITALISATION

Of all hospital admissions the respiratory disorders as a group accounted for by far the greatest proportion. In fact, 14 per cent of all admissions were on account of respiratory disorders. Of these, almost half, 6.3 per cent, of all admissions were for removal of tonsils and adenoids.

DISCUSSION

The high incidence of the respiratory disorders has been noted, and so have the difficulties of definition, classification and nomenclature. These difficulties must be related to our lack of knowledge of the pathology and pathogenesis of these common disorders. The need for further research is therefore apparent. It is only in general practice that the true pattern and incidence of the communal respiratory illnesses can be appreciated and it is only here that any useful research can be carried out.

To illustrate this pattern further, the annual incidence of respiratory tract disorders would be (estimated number of patients consulting per practice):

Coughs and colds	300
Acute sore throats	150
Influenza	90
Pneumonia	15
Acute bronchitis	45
Chronic chest conditions	120
Otitis media	50
Aural wax	50
Asthma	22
Hay fever	12
New growths	2
Tuberculosis	7
Total	863

It is obvious that the "hospital" diseases form a very small proportion of the total. Since most acute chest infections can now be managed easily and effectively at home by the family, no more than around 10 or 20 of these 863 individuals will ever see the consultant, who can have no broad concept of "disease in general practice" or disease in the community unless he has had a period of practical experience in general practice. This, of course, applies not only to respiratory disorders but to all diseases and illnesses, and it is an important point in favour of a period in general practice before embarking on a career in hospitals.

The records from this one year's survey have brought out a number of interesting aspects of the subject which merit further consideration.

Age incidence

Three patterns of age incidence were noted.

In the first, there were the group of infections that were most frequent in young children and relatively infrequent in adults and the elderly (as shown in Diagram 2, that for acute common respiratory infections).

Age distribution of acute common respiratory infections

	All ages	0-	5-	15-	45-	65 and over
Consultation rates per 1,000 at risk	238	714	284	192	194	166
Patient consulting rates per 1,000 at risk	116	323	145	100	90	77

Conditions that showed this pattern were the common colds and coughs, acute throat infections and acute otitis media. It is reasonable to conclude that in this group there is a tendency for children to outgrow these troubles naturally and spontaneously.

A second pattern of age distribution is seen in acute and chronic chest infections, i.e. pneumonia and bronchitis. Here the maximal incidence is in the young and the elderly.

The explanations for such a pattern are still problematical and there is an obvious need for further study.

The third type of pattern is where there is no obvious influence of age as in asthma.

Regional variations

The importance of the influence of climatic and geographical factors is being realised more and more and this study has confirmed previous suspicions. The incidence of most respiratory affections was highest in urban areas and lowest in rural districts - the semi-urban localities occupied a mid-position. The explanations usually offered are the effects of atmospheric pollution and the opportunities for cross-infections from overcrowding at home, at work and in travel.

Regionally, the highest rates were found in Wales, the East and West Ridings, the North West, the Midlands and, rather surprisingly, the South West. The lowest rates were noted in the South, the East and the North.

Whether a knowledge of these facts can lead to any successful preventive actions is doubtful because most of the factors which are related to the high incidence are just those associated with heavily populated industrial regions in a small island. We must, however, wait rather hopefully for the effects of the Clean Air Bill.

Social influences

The role of social factors in the incidence of respiratory disease is of great interest and importance. This study produced some surprises and some confirmation of established views.

In the more serious respiratory illnesses, i.e. pneumonia and bronchitis, the incidence increased inversely with social class, that is, the rates were much higher in the lower social classes (IV and V) than in upper classes (I and II). With the less serious conditions such as coughs and colds the incidence levels were quite different, being maximal in the middle class (III). This may not represent a true picture because it may well be that neither the upper nor lower classes feel it necessary to consult the family doctors for these more minor illnesses.

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PSYCHIATRIC DISORDERS

Dr. C. A. H. Watts

The problem of the classification of psychiatric disorders is well known, and there is an equal difficulty in forming an accurate estimate of their incidence. In the morbidity Survey the average figure was 50 persons per 1,000 at risk with extremes varying from 18 to 208 per 1,000 in individual practices.

Most practitioners find between 30 and 60 psychiatric patients per 1,000 with a mean of about 45. This figure is raised to 50 by the minority of doctors who have very high estimates. Actually the Survey figures refer to patients grouped under the title of Mental, Psychoneurotic and Personality Disorders (Group V). To these patients should be added some whose complaints are labelled as ill-defined Conditions in Group XVI. These include:

Disturbances of sleep
Nervousness
Debility and undue fatigue
Depression
Headache.

Even with the addition of these cases the total of psychiatric patients per 1,000 is only 73.6 which is far below the estimates of most previous Surveys, a list of which Dr. P. Hopkins* recorded as follows:

Author†	Year of Survey	Per-centage Psychi-atric	Per-centage Psycho-somatic	Per-centage Psychi-atric and Psycho-somatic
1. Chapman, H. O.	1947/48	8.0	—	—
2. Crawford, J. J.	1951/52	16.7	—	—
2. Crawford, J. J.	1952/53	15.6	—	—
3. Fry, J.	1952	9.4	—	—
4. Fry, J.	1951/53	11.5	—	—
5. Hopkins, P.	1951	11.1	31.1	42.2
6. Jansen, M. G.	1954	12.0	20.0	32.0
7. Logan, W. P. D.	1951/52	20.2	—	—
8. McGregor, R. M.	1948/49	6.8	16.8	23.6
9. O'Neill, D.	1952	—	—	10.25
10. Paulett, J. D.	1949/50	—	—	70.0
11. Crombie, D. L.	1957	7.0	—	—
12. Pemberton, J.	1947	6.5	—	—
13. Pougher, J. C. E.	1953	—	—	36.2-47.6
14. Watts, C. A. H. and B. M.	1947/50/51	12.2	—	—

It can be seen that these figures range from 6.5 per cent by Pemberton, to 70 per cent by Paulett surveying over a five-year period. The average of all these reports is about 11.5 per cent for psychiatric cases, which is con-

* Personal communication.

† See references, pages 51-52.

siderably higher than the present Survey. Doctors who make a special study of a disease always find more cases in their subject than disinterested workers. I think it is fair to say that the enthusiasts are likely to be nearer the truth, and as a report by the College of General Practitioners (15) puts it: "The true incidence is probably more uniform from practice to practice than these figures suggest."

The constituents of Group V are arranged under a number of descriptive labels rather than as clearly defined disease entities. In order of incidence they are as follows (patient consulting rates per 1,000 at risk):

A.	Psychoneurotic disorders	
(1)	Anxiety reaction without mention of somatic symptoms	23.1
(2)	Hysterical reaction without mention of anxiety	1.6
(3)	Neurotic depressive reactions	1.4
(4)	Psychoneurosis with somatic symptoms	7.2
(5)	Asthenic reaction	5.7
(6)	Unspecified psychoneurosis	7.0
		} = 46.0
B.	Psychoses	2.2
C.	Childhood behaviour disorders	1.0
D.	Other disorders of character, behaviour and intelligence	0.6
E.	Mental deficiency	0.5
F.	Alcoholism	0.2

Between these psychiatric conditions and firm organic disease such as cancer and the infections, are the psychosomatic or stress disorders. It is generally accepted that there is a psychogenic factor in the aetiology of these conditions and it was felt desirable to produce figures for them so that they could be viewed side by side with those of Groups V and XVI.

Psychosomatic disorders are to be found in various other groups and they have been listed as follows (patient consulting rates per 1,000 at risk):

Group III	Allergic, endocrine system, metabolic and nutritional diseases	50.8
Group VI	Migraine	5.3
Group	Functional heart disease	3.3
	Hypertensive " "	1.0
	Hypertension	14.7
		} 19.0
Group IX	Peptic ulcer of all kinds	9.2
	Disorders of function of the stomach	21.5
	Constipation	8.1

Group X	Disorders of menstruation	24.1
	Menopausal symptoms	18.5
Group XII	This includes many skin diseases such as eczema, rosacea, psoriasis, pruritus	21.8
Group XIII	Diseases of the bones and organs of movement including all rheumatic states, lumbago, muscular rheumatism	86.8
	Total	265.1

These conditions are generally accepted as being psychosomatic in origin although the list will not satisfy everyone. It will have gone too far for some, and not far enough for others. It can be seen that the incidence of psychosomatic disorders is 265.1 per 1,000. If the total of 73.6 from Groups V and XVI is added to this, the grand total is 338.7 persons consulting per 1,000 at risk, a figure which coincides with the popular estimate that one-third of the patients seen in general practice are suffering from a psychogenic and mental illness. As the total number of persons consulting is 670 per 1,000, this is, in fact, about half of the patients seen. This does not mean that half of our patients are neurotic. It is by no means certain that all psychosomatic disorders are neuroses in disguise. It should also be noted that the figures in the Survey are not for the conditions as they exist in the community, but as they present themselves to the family doctor. There are, for example, many more mental defectives than one in every 2,000 of the population.

Psychoneurotic disorders

Only the broad outline of trends is depicted in the figures available. Psychoneuroses appear to be far and away the commonest problem of psychological medicine in general practice, accounting for over 90 per cent of the psychiatric casualties. Anxiety reactions were common, whereas hysterical episodes were a comparative rarity.

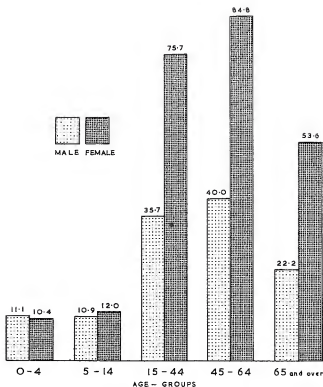
Anxiety reaction was subdivided into four categories which in order of incidence were as follows (patient consulting rates per 1,000 at risk):

Anxiety reaction without mention of somatic symptoms	23.1
Psychoneuroses with somatic symptoms	7.2
Unspecified psychoneurosis	7.0
Neurotic depression	1.4
Total	38.7

The figure for hysterical reactions was only 1.6 and that for asthenic reactions 5.7 patients per 1,000.

Reviewing the age groups (Diagram 8) it can be seen that psychoneuroses are relatively infrequent in childhood. To the low figure in the tables must be added the number of children suffering from primary childhood behaviour

Diagram 8

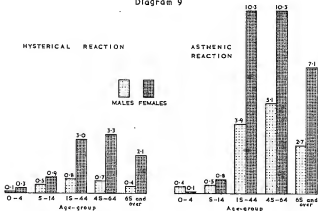


Psychoneuroses by age and sex.
Patient consulting rates per thousand at risk.

disorders. As in children a behaviour upset is so often an expression of anxiety, it is difficult to see how the two groups can be separated. However, even together the figures are only one-quarter of the average for all age groups. Compared with older people the child is relatively immune from neuroses. Under 5 the sex difference is negligible. After childhood the incidence of psychoneurosis soars, and women between the ages of 15 and 44 are more than twice as neurotic as the menfolk. The figures for the next age group 45-64 are even higher, with the same sex distribution. Over 65 the neurosis rate drops sharply but there is still a predominance of females over males, there being five women to every two men.

Hysterical reactions follow much the same pattern through the different age groups, the only difference being that among adults the condition is four times more common among women than among men. Diagram 9 shows a similar pattern in the age groups for hysterical and asthenic reactions.

Diagram 9



Hysterical and asthenic reactions by age and sex.
Patient consulting rates per thousand at risk.

Psychoses

Mental breakdowns accounted for only 4 per cent of the whole psychiatric group and 0.3 per cent of all illness. This figure is in agreement with Lord Taylor's (16) observation that psychoses in general practice amount to a fraction of 1 per cent. In Volume I of this Study there was no breakdown of the category psychoses into its various components. This was done in a sample Survey of more selected practices but it must be admitted that the figures are statistically inadequate; there is in fact only a crude picture as to the types of psychosis in the community. Each of the four age groups described in the Survey presents a distinctive picture in relation to psychoses. In childhood

psychosis is a great rarity. No cases were recorded up to the age of 5 and only four under the age of 15. From 15 to 44 is the age for schizophrenia. A sample of all kinds of practice was analysed and this showed that five out of six psychotics recorded for this age group suffered from a schizophrenic illness, and the sex distribution was about equal. From 45-64 is the age of melancholia. The proportion of women breaking down is greater in this age group than in the earlier one, there being two women to every man. After the age of 65 psychoses of all kinds become more common. Even the number of male psychotics rises, whereas before it had remained level. On the other hand the number of women affected rises with each age group. The predominant mental diseases in the aged will include senile dementia, depressions, paraphrenia and paranoid states.

Depressive disorders have been estimated as accounting for one-third of all psychiatric conditions (17). Mayer-Gross (18) described them as probably the most common complaint of psychiatric patients today. Bodkin et al. (19) stated that of the four main types of case seen in general practice the depressive reactions loomed the largest. This figure is not borne out by the sample Survey. If all types of depression are added together the total amounts to only 13 per cent of psychiatric casualties. This low estimate suggests that many depressive disorders are overlooked; being diagnosed as anxiety states or even organic disease.

Personality disorders

The anti-social psychopath with his violent behaviour and the sexual pervert do not often consult their general practitioner. In this Survey the only group under this category recorded is the alcoholic and he is rather a rare bird occurring only once in every 5,000 patients at risk. The figure of 0.2 per 1,000 is far less than the estimate of Parr (20). According to this writer the true incidence of alcoholism in England and Wales is 11 persons per 1,000 in persons over 20. The figure of this Survey is thus obviously an underestimate, as an alcoholic will only consult his doctor when he is compelled to do so because of symptoms of chronic intoxication or because he is taken along by the police. Conscience or a desire to be cured seldom brings him to the doctor. The sex ratio of three men to every woman alcoholic is probably not far from the truth. Parr suggested that the figures lay somewhere between four to one and two to one.

Mental deficiency

The figure of 0.5 patients per 1,000 equally shared by the sexes does not reflect the true state of affairs. The number of defectives under some form of care in England and Wales at the end of 1955 was 1.4 per 1,000 (21). Even this figure is far from comprehensive as some defectives are usefully employed in the community and they are never registered or identified. Many of the severe cases are institutionalised and so are not under the care of the family doctor. The only valid deduction of the Survey figures is that patients with mental defect cause little trouble in general practice.

Psychosomatic disorders

Taking psychoneuroses as a whole, there are two women to every man. Among psychosomatic disease the female predominance is less, there being three women to every two men. This figure varies with the type of disorder. The only disease in which there was an excess of males over females was the

peptic ulcer syndrome, and this was most marked in the duodenal type where the proportion of men to women was about four to one. It was three to one in peptic ulcers of all types. In the following disorders the sex incidence was equal:

Epilepsy
Nervous dyspepsia
Eczema
Psoriasis
Diseases of the sweat glands.

Details about the incidence of these various conditions will be dealt with in other and more appropriate sections.

Consultation rates

Most doctors feel that the average psychoneurotic type of patient is a time-consuming customer; and that he is a regular surgery attender. This would apply especially to the chronic cases, and I can think of several in our practice who have been seen once or twice a week for several years. These frequent attenders are completely lost in the Survey tables. The average number of consultations per patient consulting (items of service) for a sample of common diseases are as follows (the average figure for all diseases is 5.6 per annum):

Cancer of the lung	16.7
Pernicious anaemia	13.6
Cancer of the bladder	13.3
Hypertensive heart disease	12.4
Multiple sclerosis	12.1
Congestive heart failure	11.9
Cirrhosis of liver	10.5
Coronary artery thrombosis	9.7
Bronchitis with emphysema	9.6
Nephritis and nephrosis	8.8
Cerebrovascular disease	8.2
Respiratory tuberculosis	7.5
Psychoses	7.1
All neoplasms	7.0
Angina pectoris	6.7
Asthma	6.2
Chronic skin ulcer	5.6
Hysterical reaction	3.9
Asthenic states	3.7
All psychoneuroses	3.6
Eczema	2.8
Wounds	2.2

It can be seen that among psychiatric diseases all but psychoses are below the average of 5.6. The troublesome psychoneurotic is not revealed statistically. The low figure of 3.7 for Group V as a whole is probably accounted for because about 5 per cent of the patients give rise to 95 per cent of the work. Most patients attending their family doctors for psychoneuroses, whether they receive a bottle of medicine or some rational psychotherapy, are not really frequent surgery attenders. The tiresome few must distort the feelings of many doctors towards the whole group.

Geographical distribution

Figures show that the consulting rates for all illness are in direct proportion to the density of population. They are, in fact, highest in the big towns and lowest in rural areas. This may well be due to the fact that in towns the doctor is easier to get at than in the country. The consulting rates for psychoneurotic and psychosomatic disorders do not follow the same pattern precisely. There is little difference in the rates in all urban areas, whether small town or conurbation, but the figures do fall in the rural areas by about 5 per cent for both psychoneurotic and psychosomatic disorders combined. O'Neill (9) pointed out that this was so, but he suggested the difference was as high as 10 per cent.

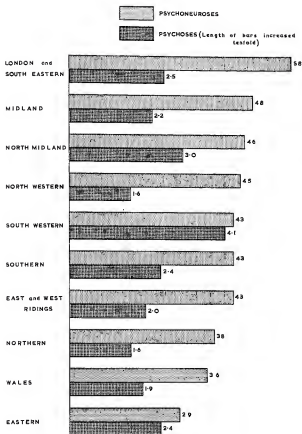
Psychoneuroses and psychosomatic disorders by type of area. Percentage of all patients who consulted

Type of area	Percentage Psychoneuroses	Percentage Psychosomatic disorders	Percentage Psychoneuroses and Psychosomatic disorders
Conurbations	7.4	25.8	33.2
Urban areas with population of 100,000 and over	7.4	25.4	32.8
Urban areas with population of 50,000 and under 100,000	6.0	23.9	29.9
Urban areas with population under 50,000	6.9	25.0	31.9
Rural districts	5.9	21.8	27.7

Geographically the London and South Eastern Region had the highest psychoneurotic rate. The lowest figures are for the other boundaries of the kingdom, namely the Northern and Eastern Regions and Wales. The other areas fall between these extremes. There appears to be no relationship between the incidence of neuroses and psychoses. The North Midland and South Western Regions have the highest rates for psychoses, the lowest figures being for the Northern and North Western Regions. The actual distribution for all areas is shown in Diagram 10, where the length of the bars for psychoses have been increased tenfold to bring them into the diagram.

Unlike anxiety reactions, hysterical manifestations are slightly more common in rural areas than in urban districts. The Northern Region has the lowest figure, and the Southern Region the highest. Consulting rates for alcoholism are the same for rural, semi-urban and urban areas, but the consultation rates are slightly higher in rural areas. These figures agree with those of Parr (20). In England more patients consult their family doctors with this trouble in the Midland Region than in other regions, but for some unknown reason the alcoholic Welshman consults his doctor much more frequently than Englishmen. His consultation rate is over three times that of the country as a whole.

Diagram 10



Geographical distribution of psychoneuroses and psychoses. Patient consulting rates per thousand at risk in each standard region.

Hospital admissions

According to this Survey tonsillectomy is the commonest cause of hospital admission in this country, appendicitis second and cancer comes third. Psychosis comes ninth on the list and a third of all patients suffering from psychoses were admitted to hospital. Psychoneurotic disorders have the tenth place in terms of the actual number of admissions, but this means that only 1 per cent of all psychoneuroses are admitted to hospital. There was no difference in these rates between the urban, semi-urban and rural practices, but there was a sex difference. In both psychoses and psychoneuroses there were seven female to every four male admissions.

Occupation and disease

Table 2 of Volume II, listing some 17 major diseases affecting working males, shows psychoneurosis to be the fourth most important cause of illness. Respiratory diseases and injury were the first two items with much higher figures. The patient consulting rates per 1,000 at risk are:

Respiratory disease (acute nasopharyngitis, influenza and bronchitis)	149
Injuries	131
Arthritis and rheumatism (except rheumatic fever)	59
Psychoneurotic disorders	35

If occupations are grouped showing the order of incidence of psychoneurosis the figures are as follows:

Occupational Group	Patient consulting rates per 1,000 at risk (Males aged 15-64)
HIGH NEUROSIS RATE	
Makers of textile goods	61
Proprietors, managers of wholesale businesses, etc.	60
Administrators, directors, managers (not elsewhere specified)	59
Commercial travellers, canvassers	55
Warehousemen, storekeepers, packers, bottlers	54
Retired or not gainfully employed, part-time workers	52
Persons employed in finance and insurance (excluding clerical)	52
Clerks, book-keepers, etc.	51
Proprietors, managers of retail businesses - non-food goods	50
Coal-mines, workers above or below ground	49
Persons employed in defence services	49
Teachers	48
Professional engineers and draughtsmen	47
Other persons employed in transport and communications	45
Other professional and technical	43
Other and undefined workers	43
Salesmen, shop assistants selling non-food goods	43
Other road transport workers	42
Other commercial occupations (excluding clerical)	40
Persons engaged in personal service	40

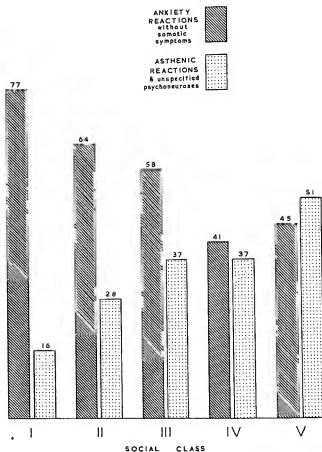
Occupational Group	Patient consulting rates per 1,000 at risk (Males aged 15-64)
AVERAGE NEUROSIS RATE	
Makers of and workers in paper; printers	39
Proprietors and managers of hotels, publicans	38
Bleachers, dyers, finishers and other skilled textile workers	37
Railway transport workers	37
Other workers in metal manufacture, engineering, etc.	37
Proprietors, managers of retail businesses - food	36
Painters and decorators	36
Electricians and electrical apparatus makers	35
Workers in unskilled occupations (not elsewhere classified)	35
Metal machinists, fitters, machine erectors	34
Leather workers, fur dressers	31
Coal gas and coke makers, workers in chemicals	31
LOW NEUROSIS RATE	
Salesmen, shop assistants - selling food	28
Workers in wood, cane and cork	28
Builders', etc., labourers and navvies	28
Water transport workers	27
Openers, spinners, winders, weavers, knitters, etc.	27
Makers of food, drink and tobacco	27
Other workers in building and contracting	26
Coppersmiths, sheet metal workers, riveters, etc.	26
Haulage contractors, drivers of goods vehicles	26
Bricklayers, plasterers, masons, etc.	23
Other agricultural, etc., occupations	22
Farmers, farm managers, land agents, etc.	18
Students	16
Furnacemen, rolling mill and foundry workers, etc.	14
AVERAGE FOR ALL OCCUPATIONS	35

On the whole this shows that administrators, professions and posts of responsibility, that is brain workers in general, show a high neurosis rate. It is quite striking to see that the fundamental and primordial occupations of farming, the making or selling of food, building houses, weavers and workers in wood or metal carry a low neurosis rate. The low figure for students is probably misleading. The term student applies to any young person at school, at college, or university. The neurosis rate at school is low, but Malleison (22) has shown that in university students under his observation no less than 250 per thousand presented with an anxiety state over the three-year course. This would raise this category to the neurosis prone group.

Social classes show some very interesting gradients among the psychoneuroses. Anxiety without somatic features occurs most in Social Class I and is lowest in Classes IV and V. For asthenic reactions, which one would expect to find more frequently in inadequate personalities, the reverse is the case. The gradient is made more obvious in the consultation rates (Diagram 11) because the lower the social class the more he sees his doctor for any illness.

Psychoneurotic conditions are very prevalent among the retired, and those who are not gainfully employed, the neurosis rate reaching a zenith of 52

Diagram II



Anxiety and asthenic reactions by social class.
 Consultation rates per thousand at risk. Males aged 15-64.

persons per 1,000 for males aged 15-64 in this category. It must be borne in mind that premature retirement is often brought about by illness, thus distorting the figures. This is illustrated by the tuberculosis rate which is four-fold higher in this group than in any other occupational category. Obviously tuberculosis caused the retirement in most cases and not retirement the tuberculosis. Nevertheless it seems that exercise and work in all forms is an antidote to neurosis. Manual workers are less prone to anxiety than the more sedentary workers. Part-time workers in the 45-64 age group are better off than those who have retired and they carry a low neurosis rate.

The tranquillity of old age brings with it a falling off of the tendency to worry. Retirement now is not accompanied by anxiety. Strangely enough psychoneurosis in the aged is only found to any extent in the old man who fills in his time with part employment. The figures in most forms of occupation drop dramatically with retirement. Workers in building and contracting and clerks and typists are exceptions, showing a slight increase on retirement.

As the neurosis rates show a trend for high figures for positions of responsibility and brain workers, and lower figures for the fundamental occupations, it was decided to see if this trend applied to the psychosomatic diseases.

Occupations were divided into three broad groups:

- A. Occupations with a neurosis rate above average;
- B. Occupations with an average neurosis rate;
- C. Occupations with a below average neurosis rate.

The only psychosomatic disorders for which figures were available were as follows:

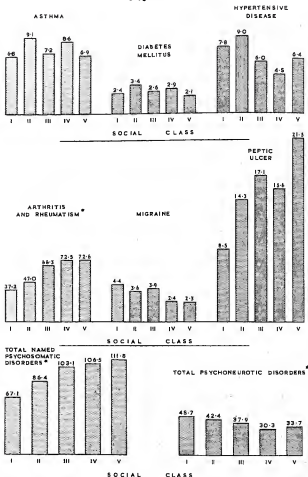
Asthma
Diabetes
Hypertension
Peptic ulcer
Rheumatic diseases.

In all these conditions Group B occupations had the highest incidence of psychosomatic disorders.

If the five social classes are reviewed (Diagram 12), asthma and diabetes are equally distributed. Hypertensive disease predominates in the upper classes. The rheumatic diseases and peptic ulcers are more common in the lowest grades, and rarest in the upper classes. Migraine alone follows the pattern of psychoneurosis. Psychosomatic disorders taken together show an increase of prevalence as one descends the social scale; a trend completely opposite to the prevalence of psychoneurotic disorders. The heights of the columns for rheumatism, psychosomatic and psychoneurotic disorders had to be reduced to bring them into the diagram.

In most psychosomatic disorders it is difficult to see any correlation between the type of work and the disease. There were, however, a few points worthy of notice. If the figures for hypertension are reviewed, there is a suggestion that stress and lack of exercise may have some responsibility, but the picture is by no means clear cut. Hypertension was most common among administrators, directors, proprietors and managers of non-food retail businesses, publicans, bleachers and dyers, sheet-metal workers, personal servants, weavers and winders. It was least common among coal-miners, electricians, farm-workers, builders' labourers and navvies, furnacemen and the category of "other professions".

Diagram 12



Psychoneurotic and certain psychosomatic disorders by social class. Patient consulting rates per thousand at risk. Moles aged 15-64.

*Height of columns reduced to bring them into the diagram.

The aetiology of peptic ulcers as regards occupation is not at all clear. Leather workers, who are low in most disease categories, head the list here. Weavers, dyers, painters and decorators come high on the list. As one would expect it is common among haulage contractors, drivers and other transport workers who have meals at irregular hours. Hard manual work in confined space with frequent knocks and bruises probably accounts for the very high rate of rheumatic disorders among miners, who easily top the list for this disease. Severe manual work is not the whole explanation, as farm labourers are comparatively free from this disorder. It is difficult to see any clear correlation between stress and the rheumatic disorders in terms of occupation.

The overall psychoneurosis rate among women is just twice that of men, but the proportion varies from occupation to occupation. There are some interesting deviations from the average. The rates for certain comparable occupations are shown in Diagram 13.

Women working as overlookers with their positions of responsibility carry a very high neurosis rate, three times that of the foreman. Women farmers fare badly compared to men farmers; on the other hand, farm labourers of both sexes have low neurosis rates. Women in higher administrative work suffered less than average. Although the figures are not included in the diagram, they show that a woman accepts retirement better than the man.

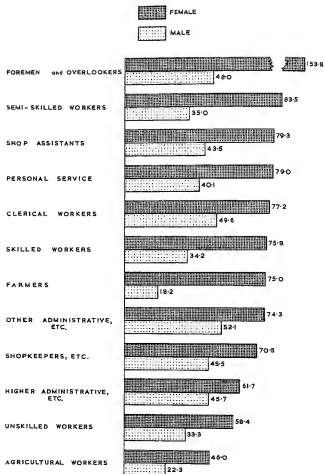
"A woman's place is in the home"; so runs the old adage. The psychoneurosis rate for the housewife who is content to run her home and family without other commitments is, however, slightly above average. The woman without any family responsibilities suffers less, and the woman who has retired or is not gainfully employed suffers least. In other words the worry and responsibility of the family demand a toll which is reflected in the higher psychoneurosis rate. One might well assume that a family would bring its consolations by way of security and companionship in old age and so on, but this again is not reflected in the Survey figures. The figure for the housewife in this age group is well below the average for women of all ages instead of a little above it, but even so she does not face it as well as her sister who has no family responsibility. Even in old age the woman who was not gainfully employed had the lowest psychoneurosis rate. Doing two jobs at once does not make life any easier for the housewife. The woman with a family and a full-time job has a high psychoneurosis rate, and the part-time worker is even worse off.

When one reviews psychosomatic disorders the housewife (not gainfully occupied) is average in almost everything. Any strain she feels is not reflected here.

Disease	Females aged 15 and over (Patient consulting rates per 1,000 at risk)	
	Housewife	All categories
Asthma	9.2	8.3
Diabetes	6.4	5.3
Hypertension	33.0	27.4
Peptic ulcers	6.0	5.6
Disorders of menstruation	24.2	27.3
Menopausal symptoms	24.8	23.2
Arthritis and rheumatism	92.7	87.1
Psychoneuroses	72.9	69.5

On the other hand the housewife who works shows a considerable excess of psychosomatic disorder. As in psychoneuroses part-time employment causes

Diagram 13



Psychoneurosis by occupation and sex.

Patient consulting rates per thousand at risk. Persons aged 15-64.

most distress and full-time rather less; women without family responsibilities come off best. There is no noticeable evidence of damage caused by a deprived maternal instinct. Indeed those who are not gainfully employed and without family responsibilities appear to have less menstrual and menopausal upsets than any other group. As regards menstruation the housewife is average in the incidence of her troubles, whereas the part- or full-time workers with a family to care for have a high incidence of illness at period times and the climacteric. Looking at the various types of employment, the higher the social scale, the less illness there is due to menstrual disorders. A woman with responsibility does not seem to have much menstrual trouble. Women farmers, administrators, shopkeepers, proprietors and manageresses, professional and managerial duties and agricultural workers have least trouble at the period times. Unskilled workers, clerks, and overlookers have more trouble than average at these times. At the menopause, clerks come off best, with higher administrators and agricultural workers coming next. Women farmers, skilled and semi-skilled textile workers make heavy weather at the climacteric.

It was suggested earlier that the incidence of psychoneuroses and psychosomatic disorders showed little correlation with occupation. If women are divided into the following categories there does appear to be some similarity of trends:

- (A) Not gainfully employed without family responsibility;
- (B) Full-time workers without family responsibility;
- (C) Housewife;
- (D) Part-time worker without family responsibility;
- (E) Full-time worker with family responsibility;
- (F) Part-time worker with family responsibility.

In these various categories the psychoneurosis rate and the psychosomatic rate follow roughly the same pattern.

SUMMARY

The difficulty in forming an accurate estimate of psychoneurotic conditions is stressed. The average of this Survey of 73.6 persons per 1,000 is probably on the low side. If these figures are combined with those for psychosomatic disorders the total is precisely one-third of the patients at risk. On the other hand, it is by no means certain that psychosomatic disorders are entirely psychogenic in origin. The distribution of psychiatric conditions by age, sex and geographical regions is discussed. Women are affected twice as often as men. The problems of occupation and psychoneurosis are reviewed, and the figures are compared with those for psychosomatic disorders. There appears to be little correlation except, perhaps, when the work and marriage status figures are compared.

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CHAPTER IV

DISEASES OF THE NERVOUS SYSTEM AND EYES

Dr. C. A. H. Watts

Disease of the respiratory system accounts for more sickness in general practice than disease of any other system. It is surprising to find that "Diseases of the nervous system and sense organs" comes second in order of frequency. If this group of conditions is split down, the incidence of disease in its various main components is as follows (percentage distribution):

Diseases of C.N.S.	12.7
Diseases of peripheral nerves	8.4
Diseases of eyes	37.2
Diseases of ears	41.7

These figures show that this section is considerably inflated by diseases of the eyes and ears, and the latter group has already been considered in the chapter on respiratory disease. Neurology, as reflected in problems on the central nervous system, does not play a big part in general practice. If one excludes cerebro-vascular disease, epilepsy and migraine, which are common, the residue comprises rather less than 0.5 per cent of all patients consulting the general practitioner for all diseases.

This chapter is subdivided into two sections dealing with:

- (A) Diseases of the nervous system
- (B) Diseases of the eye.

DISEASES OF THE NERVOUS SYSTEM

Items in this section are drawn from many sources in the main morbidity tables. The majority come from Group VI but to this must be added infective conditions such as herpes zoster which occurs frequently in practice, and comparatively uncommon fevers due to the meningococcus, and the viruses of poliomyelitis and encephalitis. The rare but serious condition of cerebral neoplasm is also included. The various lesions of the nervous system, in order of frequency, are (patient consulting rates per 1,000 at risk):

Migraine	5.3
Vascular lesions affecting the central nervous system	4.9
Unspecified neuralgia and neuritis	4.5
Herpes zoster	3.5
Sciatica	3.5
Epilepsy	3.3
Brachial neuritis	1.8
Facial palsy and trigeminal neuritis	1.2
Other forms of cerebral palsy	1.1
Paralysis agitans	0.9
Multiple sclerosis	0.6
Other diseases of the central nervous system	0.6
Poliomyelitis	0.2
Malignant neoplasms of eye, brain and other nervous system	0.1
Other diseases of nerves and peripheral ganglia	0.1

Vascular disease of the central nervous system is one of the commonest neurological disorders of general practice. It is largely seen in two forms which are grouped together under this heading. There is the cerebro-vascular accident which is usually unexpected and dramatic in onset. The illness, if not rapidly fatal, is often incapacitating, and is frequently accepted by relatives as "writing on the wall". The prognosis is by no means always bad, and it is as well to remember that Louis Pasteur survived a stroke by 27 years, during which time he did most of his important work. Apoplexy in our ageing population is certainly one of the modern captains of the men of death. Almost unknown in childhood, it is rare before 45, and it comes into its own after 65. The sex incidence is almost equal with a very slight excess among males. In the population over 65 years of age it is about as common as neoplasms and rather less than coronary artery disease (Diagram 14). Cerebral arteriosclerosis is the other way in which cerebro-vascular disease is manifest. The onset is usually insidious but the condition is in most cases progressive, often rendering the patient a helpless caricature of his former self.

Figures for new cases of cerebro-vascular lesions for each month of the year were obtained in a sample of nine selected practices covering a population of 27,000, and no significant seasonal difference was shown. The geographical distribution of cerebro-vascular disease shows no marked deviation from the average for all areas of 4.9 per 1,000 persons at risk. In the East and West Ridings, North Midland and South Western Regions, the figures were slightly above average, and below this in Wales, and the Northern and Eastern Regions. In the north, midlands and Wales the incidence was highest in country areas and lowest in towns, and in the south the reverse was the case. The density of the population appears to make little difference to the incidence. In fact it can perhaps be inferred from all this that where a man lives has little effect on his chances of having a stroke.

About one patient in every six of these cases was admitted to hospital. This was more likely to happen to town dwellers than to semi-urban and rural casualties.

Occupation and the incidence of cerebro-vascular disease

In the age group 15-64 of male workers the average incidence of cerebro-vascular disease was 2 per 1,000. The highest rates occurred in men working part-time, not gainfully employed or retired, where 17 per 1,000 were affected. This implies that many men are compelled to retire before the usual age because of cerebral arteriosclerosis. The next highest rates occur in the following occupations (patient consulting rates per 1,000 at risk):

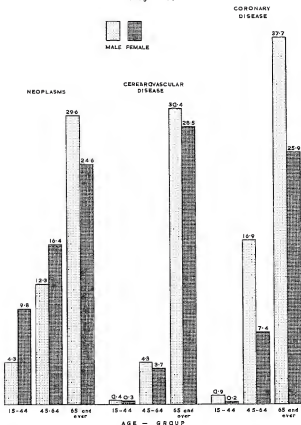
Proprietors and managers of hotels	8
Openers, spinners, winders, weavers, knitters, etc.	5
Administrators, directors, managers	4
Proprietors, managers of retail businesses — non-food goods	4

Lowest rates (i.e. less than 1 per 1,000) are found as follows:

Coal-miners
Builders' labourers and navvies
Haulage contractors and drivers of goods vehicles.

It would seem from these figures that the stress and strain of management is more damaging to the cerebral blood vessels than the hard physical exertion of coal-mining and the navvies' job.

Diagram 14



Neoplasms, cerebrovascular disease and coronary disease by age & sex.
Patient consulting rates per thousand at risk.

This trend is also shown in the social classes where professional and managerial groups are shown to be more affected than the others. Partly skilled occupations have the lowest incidence.

Once retirement has taken place the incidence of cerebro-vascular disease becomes much more evident in all groups with one notable exception. The executive who stays the course and survives through to retirement has a lower incidence of this trouble than any other group. From being the worst risk he becomes the best, and textile workers, always prone to arteriosclerosis, lead the field. Managerial and professional work does not appear to increase cerebral arteriosclerosis in employed women, but the textile operative still seems to have more than her fair share of this trouble. Work and family responsibility seem to carry with them some immunity. The woman who is not gainfully employed and has no family to care for has a much greater chance of contracting cerebro-vascular disease than her sisters who work and rear children.

Neuritis and neuralgia

These are among the most painful maladies which afflict mankind. In the tables they are classified under a number of headings in different sections as follows:

Disease	Patient consulting rates per 1,000 at risk		
	Males	Females	Persons
Lumbago	11.0	6.0	9.5
Displacement of intervertebral disc	5.7	4.4	5.0
Sciatica	3.5	3.6	3.5
Other and unspecified forms of neuralgia and neuritis	3.3	5.6	4.5
Brachial neuritis	1.2	2.3	1.8
Facial paralysis and trigeminal neuralgia	0.8	1.6	1.2
Total	25.5	25.5	25.5

It is the modern practice to ascribe most cases of sciatica and brachial neuritis to disc lesions, and it was felt appropriate to consider all these conditions together. Many cases of lumbago are probably of disc origin. No matter what the cause, neuritis is a condition produced by the irritation of a somatic nerve.

All forms of neuritis are excessively rare in childhood. There is a high incidence among adults reaching a peak in the middle-aged and falling off again in the old. Brachial neuritis is twice as common among women than among men. Unspecified forms of neuralgia are also more common among women than men. Sciatica is about equal in both sexes, but lumbago and disc lesions are rather more common in men than in women, there being five men to every four women suffering from these complaints.

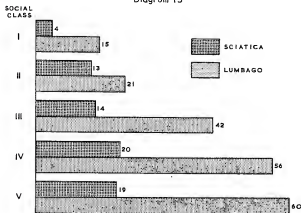
Geographically there is quite a wide disparity. Brachial neuritis is five times as common in the Northern Region as in the South Western Region. The figures for sciatica and unspecified neuralgia are more evenly distributed. Disc lesions show a wide variation. The East and West Ridings have the highest incidence, and Wales the lowest, in the proportion of seven Yorkshiremen to

every Welshman. It is difficult to account for these differences. It is not due to urbanisation in any way as the figures in the various population grades for sciatica are all very similar. Only 1 per cent of sciatic patients were admitted to hospital whereas the figure for disc lesions was 4 per cent. More country folk were admitted than urban patients.

In the tables dealing with occupation and disease the only diseases of this neuritis group which are mentioned are sciatica and lumbago. Generally the trends for both conditions follow the same pattern. As one would expect, miners head the list for both diseases. Heavy work, often under cramped conditions, offers excellent facilities for injuries in the region of the lumbar spine. Sedentary occupations suffer less than manual workers.

This trend is also shown up in the social grading, both for patients consulting and consultations (Diagram 15).

Diagram 15



Sciatica and lumbago by social class.

Consultation rates per thousand at risk. Males aged 15-64.

In spite of the fact that sedentary workers suffer less from sciatica than those doing hard manual jobs, the rest which comes from retirement does not lower the risk. The average figure for all male workers aged 15-64 is 3.8 per 1,000 at risk, whereas for those over 65 who have retired it is 5.8. The figure for persons employed over the age of 65 is 7.2. This high figure suggests that work over 65 carries an extra risk of sciatica. The figures for lumbago do not follow the same pattern, the incidence being about equal in all the groups. The same occupational trends are seen in women as in men. While more prone to sciatica, they suffer less from lumbago.

Epilepsy

The overall figure for epilepsy is 3.3 persons per 1,000 at risk which substantiates the estimate of Lord Cohen (1): "The incidence of epilepsy is between 2 and 4 per 1,000 of the population so that there are in Great Britain between 100,000 and 200,000 epileptics." A detailed study of the epilepsies in General Practice (2) by the College of General Practitioners put the overall figure at 4.82 per 1,000.

Among children and adults the sex distribution is equal but after middle age there is a preponderance of males. In old age three men are affected to every two women. In infancy the figures are under 2 per 1,000 rising through childhood to reach a peak of 4.1 per 1,000 in adult life. The figures in middle and old age fall off again.

The average number of consultations per patient consulting for epilepsy (5.8) is near that for all diseases (5.6). This is probably an underestimate of the attention required as epileptics needing more anti-convulsant drugs often send a relative to the surgery for a repeat prescription and this item of service was not recorded in this Survey. Nevertheless it must be conceded that among chronic patients the epileptic in general practice is usually not demanding or troublesome. The figures for sample practices showed that there were rather more epileptics in semi-urban practices than in either urban or rural areas where the incidence was the same. The distribution of epilepsy through the country is interesting (Diagram 16). In the Northern and Eastern Regions figures are lowest, and as one moves south and west the figures gradually rise to reach a peak in the Midland and South Western Regions. The figures for Wales are average.

Occupation and epilepsy

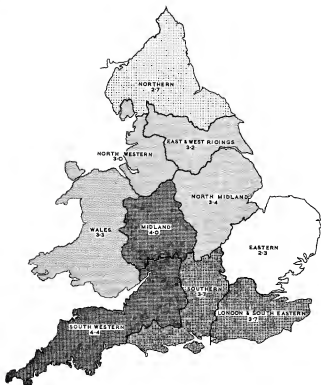
Among male workers the average number of consultations per epileptic for patients consulting was only a little above the average for all patients. Among the social classes it was surprising to find the figure was high among Class I, that is professional persons, and administrators and directors. The remaining four classes showed an increase with each step down the social grading (Diagram 17).

The reason for the high figure in Class I is not clear. It does not come from directors and administrators who together have the lowest figures. The tendency will be for epileptics to avoid occupations which might endanger themselves and others and as one would expect the highest figures are shown among casual labourers and unskilled occupations. Farm labourers show a figure above average and so do shop assistants. Among women the average figure (3.5) was similar to that of men (3.7), but looking at the various occupations there are some curious differences. The figure for women shop assistants was low, that for men was high. Women overlookers had the very high figure of 9.0 per 1,000 patients at risk, five times the incidence of epilepsy in foremen. The disease in unskilled workers was nearly twice as common in women as in men. This may be because the marriage market for the epileptic woman is not a good one and she is thus compelled to seek work. Some confirmation of this thesis is shown by the fact that the figure for housewives is lower than average. The highest figure for all occupational groupings is that for women who are not gainfully employed. Epilepsy in these cases is probably the cause of the unemployment.

Migraine

In this Survey the average figure for persons suffering from migraine is 5.3 per 1,000 at risk. Nevil Leyton (3) suggests a figure almost ten times as high. The

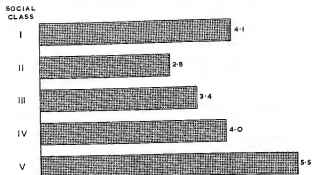
Diagram 16



Geographical distribution of epilepsy.

Patient consulting rates per thousand at risk in each standard region.

Diagram 17



Epilepsy by social class.

Patient consulting rates per thousand at risk. Males aged 15-64.

true incidence probably lies between these two extremes. Many patients suffer from severe headaches and at times vomit profusely and yet they never think of going to see their doctor about it. Maybe from past experience they have decided there is no remedy for their complaints which they accept as part of their make up.

Uncommon before the age of 5 it increases in incidence through childhood to reach a plateau in adult life and middle age. Migraine is not usually a burden of old age possibly because the arteries are incapable of going into spasm. In childhood both sexes are affected alike. In adult life women victims are twice as common as men and by middle age this disparity has increased, until over 45 there are four women to every man. The incidence throughout the country varies little, but it is more common in the London and South Eastern Region than elsewhere. In general the townsman has more headaches than his country cousin.

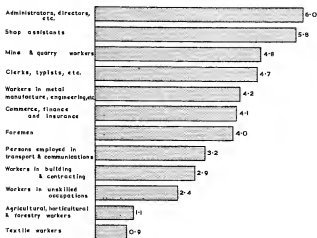
It is not a condition which is normally referred to hospital for admission, and as one would expect few admissions were recorded.

Occupation and migraine

The differing incidence of migraine among occupations (Diagram 18) suggests no clear explanation. One is tempted to argue that the stress and strain of management and underground work make for a higher incidence. It would follow that unskilled workers with little responsibility and farming occupations should have a low incidence rate and figures do in fact bear this out. Foremen, however, who so often feel they are ground between the wheels of men and management and have a difficult job to do are half-way down the list, while shop

assistants whose job is neither mentally nor physically particularly exacting have a very high incidence indeed. There seems to be no obvious explanation, but the figures of incidence are probably not very accurate.

Diagram 18



Migraine by occupation.

Patient consulting rates per thousand at risk. Males aged 15-64.

It is noted that textile workers with their marked tendency to cerebrovascular disease come at the bottom of the list of migraine victims. If the incidence by social classes is reviewed it can be seen that migraine is most common among the professions, and gets progressively less common as one descends the social scale. As has already been stated, the figures for women are always considerably higher than for men. The one exception seems to be for women shopkeepers, proprietresses and manageresses of wholesale businesses. Here the modest figure of 5.4 per 1,000 is not far from that for the foreman who has a comparable male occupation. Unskilled and farm workers among women have respectively four and five times as much migraine as their menfolk.

Paralysis agitans

This disease was first adequately described by James Parkinson in 1817. About a century later there was an epidemic of encephalitis which left a trail of these patients behind it. Generally speaking paralysis agitans is a disease of old age. It is very rare before 45, becomes evident in a few middle-aged people and is

most common in senility. Rather more men are affected than women. It is fairly evenly recorded throughout the country but is a little more common in the Midland and South Western Regions.

Multiple sclerosis

This disease, which used to be called disseminated sclerosis, has its onset in early adult life. Walshe (4) states that the onset in most cases is in the third decade, but occasionally cases occur a little earlier or a little later. This Survey does not indicate the onset but only the prevalence. According to the figures it is unknown before 15 years, and becomes evident over the next 30 years. Not being a killing disease its victims linger on and the highest incidence is between 45-65 years. Few victims survive into old age. The sex distribution shows a slight preponderance of females, seven women to five men. These figures are not far removed from those of Walshe, who suggests there are six women to every four men. The incidence varies quite considerably according to the geographical region. It is rarest in Wales and four and a half times more common in the Eastern Region. It is evenly spread over the northern parts, but is lower in the Midland and South Western Regions.

The geographical distribution (Diagram 19) suggests that the Celtic stock of Wales and Cornwall is more resistant to the disease than that of the Anglo-Saxons and Danes.

Infectious diseases of the central nervous system

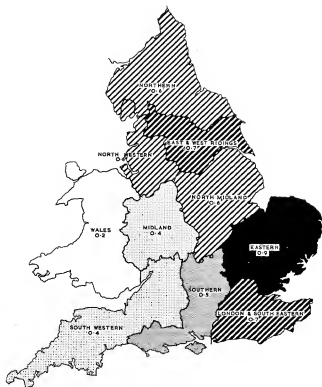
Herpes zoster is the most common infection of the nervous system. It is a virus disease affecting the posterior nerve cells in much the same way as the virus of poliomyelitis injures the anterior horn cells. It is a disease almost peculiar to general practice, as very few cases find their way into hospital. Rather more women are affected than men, except at ages 15-44 years where the reverse is the case. It is comparatively rare in childhood but the incidence rises with age and the peak is in senility.

It is known that there is some relationship between herpes zoster and chicken pox. This is not borne out by the figures for both diseases. The incidence of zoster is surprisingly uniform throughout the country. In Wales and the South Western Region where there were fewest cases of varicella, there was a standard-sized crop of herpes zoster. Indeed in Wales there were more cases of zoster than of varicella.

The figures for poliomyelitis, encephalitis and meningitis will be dealt with elsewhere.

Malignant disease

The brain along with the pancreas, larynx, bladder and oesophagus is a relatively uncommon site for malignant disease. Cancer of these other organs is almost confined to old age, whereas malignant neoplasm of the brain has a similar incidence in all the age groups including children, although the figures are small. In the latter it is usually a primary growth, whereas metastatic deposits in the brain are more common in the older groups. The very low incidence of only one case per 10,000 patients consulting gives one no figures to enlarge upon the subject which is clinically of great importance. The general practitioner can expect to see one such case every four or five years.



Geographical distribution of multiple sclerosis.

Patient consulting rates per thousand at risk in each standard region.

DISEASES OF THE EYE

The prevalence of diseases of the eye in order of frequency is as follows:

Disease	Patient consulting rates per 1,000 at risk		
	Males	Females	Persons
Refractive errors	13.1	15.3	14.3
Conjunctivitis	13.9	14.1	14.0
Stye	4.8	7.5	6.3
Other eye diseases	5.2	5.8	5.5
Injuries	5.8	2.4	4.1
Blepharitis	3.1	4.2	3.7
Other inflammatory diseases of eye	1.5	2.2	1.9
Cataract	1.1	2.0	1.5
Corneal ulcer	0.9	0.7	0.8
Glaucoma	0.5	0.8	0.7
Total	49.8	55.0	52.8

Infective conditions of the eye

If conjunctivitis, styes, blepharitis and other inflammatory diseases of the eye are all added together, then infective disorders are the commonest eye conditions seen by the general practitioner. Conjunctivitis is far and away the most frequent problem. The incidence is highest in infancy and thereafter remains at a fairly constant level for all other age groups. The sex incidence is about equal, but it is slightly more common in women than men over 45.

The hordeolum, popularly called the stye, is the second most common infective disorder of the eye. It comes far behind conjunctivitis in frequency and blepharitis comes a close third. Once again these conditions are more common in childhood than later. Blepharitis is about equal among the sexes, but styes are more frequent among females than males in all age groups.

Refractive errors

The most common eye problem to confront the family doctor is the patient who needs glasses or thinks he needs them to correct refractive errors. The figures show that a peak of demand is reached in the 45-64 age group. The lowest figures are in childhood; the age groups of 15-44 and 65 onwards being about equal. This is in keeping with the concept that presbyopia sets in about the age of 45. As after the first consultation with his family doctor the patient has direct access to the optician, the figures are no guide to the true incidence of refractive errors. The figures for those under 15 are also vitiated as children may be tested by the school ophthalmoscopy and so on.

Injuries

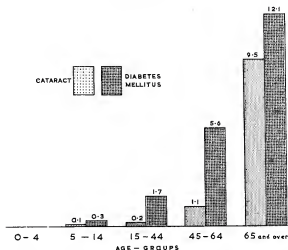
As one would expect eye injuries are much more common among men than women. More than twice as many such accidents occur among men, and the rate reaches a peak in the 15-44 age groups to fall off in old age. The incidence of foreign body in the eye is similar in every way to the general accident rate. Among women the accident rate is level all through life except for a fall during senility. No one will be surprised to learn that the Survey confirms that "contusion of the eye and orbit" reaches its peak in males below the age of 15!

Injury to the neural structure of the eye such as detachment of the retina or injury to the optic nerve is so rare as to be unrecordable in terms of per 1,000 persons consulting.

Corneal ulcer

This condition occurs in all age groups, but it is most common in maturity and old age. It is four times more common in the aged than among the young. The sex distribution is equal.

Diagram 20



Age distribution of diabetes mellitus and cataract.
Patient consulting rates per thousand at risk.

Eye diseases of the aged

Cataracts and glaucoma are essentially diseases of the aged. While congenital and traumatic cataracts do occur in young people they are a rarity. A few are seen in the age group 45-64, but in senility they are common, four women being affected for every three men. Glaucoma, too, is rare before 65 and is almost twice as common in women than men. The association between cataracts, diabetes mellitus and senility have long been recognised. This is illustrated in Diagram 20.

SUMMARY

The main problems in neurology of general practice are cerebro-vascular disease, epilepsy and migraine. Cerebro-vascular disease is one of the commonest causes of death in persons over 65 years of age. It is less common in manual work than administration. With lumbago and sciatica the reverse is the case, that is, heavy manual workers suffer most, and men suffer more than women.

Epilepsy accounts for about 3.3 persons per 1,000 at risk and is more common in the less skilled and less dangerous occupations.

Migraine is a troublesome but not a disabling disease. The figures for the Survey probably underestimate the prevalence of this condition in the community.

Infections of the eye, including conjunctivitis, styes and blepharitis, accounted for most of the ophthalmology in general practice, with refractive errors second and injury third on the frequency list.

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CHAPTER V

DISEASES OF THE DIGESTIVE TRACT

Dr. H. W. K. Acheson

INTRODUCTION

Of all the patients who consult their general practitioner those with diseases of the digestive tract form the third largest group.

Disease group	Rates per 1,000 population at risk	
	Consultations	Patients consulting
Respiratory system	880.4	264.2
Nervous system and sense organs	330.5	119.8
Digestive system	322.3	107.0
Circulatory system	401.8	68.4

Thus a general practitioner with 2,500 patients on his list probably saw some two to three patients every working day who suffered from digestive disorders. This does not mean, however, that diseases of the digestive tract occupied third place in the amount of work done. As will be seen from the table above, patients who had a disease of the circulatory system were seen almost twice as frequently and so, if the number of consultations per patient is taken to represent the amount of work involved, "diseases of the digestive tract" come to occupy fourth place.

The economics of illness are factors which are seldom subjected to detailed analysis and it is not possible to quote figures. The high incidence of "diseases of the digestive tract" indicates their great importance in this field, not only because of the cost of drugs used in treatment but also by virtue of the fact that the patient often needs to remain absent from work. In many cases, for example gastric and duodenal ulcer, a long course of treatment may be required; other diseases, such as herniae, also involve a long period of absence from work.

In the classification of "diseases of the digestive tract" the General Register Office has followed the International Statistical Classification of Diseases, Injuries, and Causes of Death. On the whole this is satisfactory. The entry "gastritis and duodenitis" would be better contracted to gastritis. Indeed, it is doubtful whether gastritis can occur without an associated duodenitis, and even more doubtful whether duodenitis ever occurs on its own. In Volume I of this Study all herniae are grouped together as "herniae of the abdominal cavity". More information would have been obtained if the sites of herniae had been separated. Clinical experience shows that the inguinal region is the most frequent site but it would have been of interest to have known the incidence of other types of herniae and their relation to occupation.

Diseases and conditions affecting the digestive
tract in order of prevalence

Disease or Condition	Patient consulting rates per 1,000 at risk
INFECTIONS	
Gastro-enteritis and colitis (excluding ulcerative)	22.2
Appendicitis	4.0
Dysentery	2.0
Diarrhoea (age 2 and over)	3.3
Vomiting and diarrhoea	1.2
Food poisoning	0.6
Abscess anal and rectal region	0.5
Disorders and function of stomach	21.5
Gastritis and duodenitis	13.9
GASTRIC AND DUODENAL ULCER	
Duodenal ulcer	5.9
Gastric ulcer	1.9
Peptic ulcer (not otherwise specified)	1.4
OTHER CONDITIONS	
Abdominal pain	8.2
Constipation	8.1
Haemorrhoids	7.5
Hernia of abdominal cavity	7.3
Malignant neoplasms	1.4
Others (not elsewhere specified)	10.4

It is important to remember that patients present themselves with symptoms and not with diseases. The symptoms may be definite; for example, vomiting, diarrhoea, constipation, rectal bleeding, and pain. Or indefinite; such as wind, heartburn, "acid", nausea, lack of appetite, and "butterflies in the stomach". To arrive at a diagnosis a full history and a careful examination are essential. If the diagnosis then remains in doubt further investigation will be required. To the general practitioner clinical ability is paramount, but intelligent use of diagnostic aids is also of great importance. Certain aids are available to him in his consulting rooms, but the facilities of a hospital are also often required. Pathological and radiological facilities should be available to every practitioner for, with the help of these departments, he can frequently complete the diagnosis and initiate treatment. In this way out-patient time can be utilised to the best advantage.

Many of the diseases and conditions which were recorded in the table above could only be diagnosed on clinical grounds, e.g. gastritis, disorders of function of the stomach, diarrhoea. Additional investigations might have led to a more definite diagnosis but as the illness was often of short duration and responded to symptomatic therapy, these were usually unnecessary. It is, however, important to remember the possibility of a psychosomatic illness. The majority of illnesses could be diagnosed with considerable accuracy, e.g. gastric and duodenal ulcer, neoplasm. Illnesses which were diagnosed as "abdominal pain", "diarrhoea", "vomiting and diarrhoea", indicated the extent to which minor digestive disturbances occurred and which were of such short duration that a more accurate diagnosis was often impossible. It must

be borne in mind, however, that a recurrence of the same or similar symptoms might have indicated important underlying pathology.

INFECTIONS

The tables compiled by the General Register Office from the material obtained in the Survey did not classify individually all the infections of the gastro-intestinal tract. Appendicitis, dysentery and food-poisoning were each separately recorded. Gastro-enteritis and colitis (except ulcerative colitis) were combined in one entry. (Ulcerative colitis had been included in "other diseases of the digestive system".) In the majority of cases of gastro-enteritis the passage of infected material from the small intestine into the large intestine would bring about a concurrent colitis. It was therefore reasonable to bracket these two diagnoses together. The incidence of gastro-enteritis might have been raised by the inclusion of cases of food-poisoning which were often difficult to diagnose with certainty unless the source of infection had been traced, or unless the causative organism had been identified.

From the socio-economic point of view the importance of these diseases lies mainly in their frequency and in the danger they represent to the old and to the very young.

Gastro-enteritis and colitis (except ulcerative colitis)

Gastro-enteritis and colitis had a patient consulting rate as high as 22.2 per 1,000 at risk. In children below the age of 5 the rate was particularly high, for in this age group 95 of every 1,000 children were affected. Between the ages of 5 and 14 the incidence was reduced to 23 per 1,000 and in the adult population it dropped still further to 15 per 1,000. These figures reflected clinical experience. The very high patient consulting rate in young children might well have repaid further investigation into the aetiology. Children from Social Class I were affected only half as often as the children from any other social class, so that the answer to this high incidence might have been in greater attention to hygiene.

The mining industry provided the highest incidence among employed males aged 15-64, with unskilled workers running second. The miners showed a patient consulting rate more than three times that of any other occupational group, but as this condition most frequently took the form of a minor illness these could be false figures and may be due to the need for miners to produce medical certificates to cover even short periods of absence from work. The general practitioner might not have been consulted until the illness was over. Gastro-enteritis could have been very difficult to prove in retrospect. The high incidence amongst unskilled workers could have been due to general low standards of diet and hygiene. Women of the administrative and professional grades revealed a much higher patient consulting rate than that shown by men at the same level of employment. The geographical survey showed patient consulting rates which varied widely; from 15.5 per 1,000 at risk in the Eastern Region to 27.5 per 1,000 in the North Midland Region.

Dysentery and food-poisoning

The true incidence of these conditions might have been greater than shown in the tables. In the Survey, dysentery was found to occur in two persons out of every 1,000 at risk, and food-poisoning occurred in 0.6 per 1,000. The difficulty in establishing the aetiological factor might have led many doctors to record the diagnosis as gastro-enteritis. In addition, many cases of food-poisoning might have produced only mild symptoms and so did not necessitate a visit to the doctor.

Both dysentery and food-poisoning were found to occur more frequently in children than in adults. Occupational figures are not available for adults but it is interesting to observe that both conditions occur four times more frequently in urban areas than in rural areas.

Gastritis and duodenitis

The Survey showed that 13.9 of every 1,000 people developed gastritis or duodenitis - a patient consulting rate which, in the infective group, was exceeded only by functional disorders of stomach and by gastro-enteritis. Whether duodenitis existed as a separate entity is very much open to doubt; it is more reasonable to regard it as secondary to gastritis or to a duodenal ulcer. The clinical syndrome of gastritis is well known and may be described as "gastro-enteritis without diarrhoea". Indeed, the aetiology and symptomatology of gastritis are so similar to those of gastro-enteritis that it is reasonable to regard them as variants of the same condition.

Any of the conditions of the gastro-intestinal tract which we have considered so far could have had a common aetiology; bad eating habits, infection, drug irritation or toxicity and alcoholic excess. The symptomatology varies slightly according to the anatomical site or sites affected. These conditions must therefore be viewed as a whole before a true picture of the frequency of gastro-intestinal disorders becomes apparent.

Appendicitis

Appendicitis was the only infection of the gastro-intestinal tract which could be considered on its own.

The Survey revealed a patient consulting rate of 4 per 1,000 at risk during the year and the great majority of cases were in those under the age of 45. Both sexes were equally affected. Neither the patient's position on the social scale nor his occupation had any effect upon the incidence of the disease. Economically, appendicitis is of importance because of its frequency and because the great majority of cases will require admission to hospital for operation, so that the patient will be away from his work for from three to six weeks. It is not possible to say from the figures provided how many cases did not require operation, nor is it possible to compare the incidence of acute and chronic appendicitis, as they were not shown separately in the Volume I tables.

GASTRIC AND DUODENAL ULCER

Gastric and duodenal ulcers are of great importance both economically and socially, apart from their purely medical importance. An ulcer patient draws attention to himself not only by the traces of white powder on his lips but also by his demands for a special diet and by his frequent periods of irritability. In the economic field the illness requires lengthy treatment during which the patient will not be able to work with full efficiency. Even when healing has taken place it is more than likely that the symptoms will recur.

The patient consulting rate for gastric and duodenal ulcer is shown below. It will be seen that gastric ulcer occurred with almost equal frequency in both sexes, whereas duodenal ulcer was four times more common in men.

Sex distribution of gastric and duodenal ulcer - patient consulting rates per 1,000 at risk

	Males	Females	Persons
Gastric ulcer	2.5	1.4	1.9
Duodenal ulcer	9.6	2.6	5.9
Peptic ulcer not otherwise specified	1.9	0.9	1.4

It is probable that duodenal ulcer may have an entirely different aetiology from gastric ulcer; more research on this point is required. Clinical experience indicates that persons undergoing constant stress or tension, for example the ambitious, energetic professional or business man, are more likely to develop a duodenal than a gastric ulcer. A gastric ulcer, on the other hand, is more likely to result from nutritional factors (bad eating habits, alcoholic excess) and conditions which produce gastritis.

Both the duodenal ulcer and gastric ulcer can often be diagnosed with accuracy on clinical grounds alone. A barium meal is, however, essential to support the diagnosis and to eliminate neoplasia. These are conditions which can be treated with considerable success in the patient's home by his general practitioner. It should therefore be possible for every general practitioner to be able to arrange for a barium meal without having to send his patients to a consultant in the out-patient department of a hospital. Not only should the radiological department be open to the general practitioner but he should also have access to the pathological department, both for the benefit of his ulcer patients and for the investigation of many other diseases. These facilities are becoming more widely available and it is hoped that they will soon become universal.

In the tables compiled from the Occupational Survey, gastric and duodenal ulcer have been taken together so that it is not possible to gauge the influence of occupation and social status on each one separately. Taking the two conditions together the lowest incidence among males aged 15-64 is found in Social Class I and the highest incidence in Social Class V. From the known causes of gastric and duodenal ulcer it is reasonable to conjecture that duodenal ulcer is more common in the higher social classes and that gastric ulcer is more common in the lower social classes. Employed males in the age group 15-64 revealed a patient consulting rate of 16.8 per 1,000 at risk. Open-air occupations such as agriculture, horticulture and forestry showed the lowest incidence (10.7 per 1,000); the highest incidence was found among textile workers (28.1 per 1,000). Administrators and directors came mid-way with a patient consulting rate of 19 per 1,000. Women had approximately the same incidence whether employed in manual or in non-manual work. Women employed as overlookers and skilled workers in textiles had the highest rates among females. It is interesting to notice that in women with family responsibilities who worked part-time, gastric and duodenal ulcers occurred with greater frequency (8.2 per 1,000) than in women with family responsibilities who worked full-time (5.8 per 1,000). This is the reverse of what would have been expected, though it is impossible to judge the significance of this observation without further investigation.

OTHER CONDITIONS

Neoplasms

New growths of the gastro-intestinal tract were most common in those over 65 years of age. All sites of the tract were affected with more or less equal frequency though neoplasms of the stomach and rectum occurred with greater frequency in men. The large intestine was affected more often in women. Occupation, social class and area of residence had no effect on the patient consulting rate.

Haemorrhoids

Haemorrhoids occurred with almost equal frequency in both sexes and had a general patient consulting rate of 7.5 per 1,000 at risk. Of the women who were affected the greatest number of cases occurred during the child-bearing period (age group 15-44) which would strongly suggest that pregnancy is the

most common single factor. In men the age group 45-64 showed the highest incidence.

Haemorrhoids were slightly more common in Social Class I. Employed males showed an overall incidence of 10.7 per 1,000 but there was no marked variation between occupational sub-groups, except in the category covering agricultural, horticultural and forestry workers where the rate fell almost a half. The analysis of the frequency of haemorrhoids among retired male workers, however, showed that those who had been previously employed as administrators or directors had a patient consulting rate four times greater than the average, and those who had held employment in commerce, finance or insurance had a patient consulting rate twice as great as the average. Constipation is generally held to be the most common cause of haemorrhoids and if this was so we should expect to find that these persons also had a high incidence of constipation. In actual fact we find that in both these groups the incidence of constipation was below the average for all retired men. Persons employed in these categories were mainly sedentary workers. Clerks and typists are also sedentary workers yet among retired males they had an average incidence of constipation and an incidence of haemorrhoids which is only a little above half of the average. There was no real variation in patient consulting rates between the different regions of the country, nor between population groups of differing size.

Herniae of the abdominal cavity

Although hernia is not the most common disease of the gastro-intestinal tract, it is one of the most important both economically and socially. A man was three times more likely to develop a hernia than was a woman, and as a large number of the cases which were diagnosed required admission to hospital there was a consequent loss of earnings and production. These economic factors are magnified by the length of the waiting list for hernia operations. These can seldom be placed in the urgent category, and yet until operated upon the patient may have to remain "off work". If he is at work he is probably only able to perform light work. Textile workers, unskilled persons and miners headed the list of occupations most frequently affected. Building industry employees and clerks and typists had the lowest patient consulting rate of any occupational order.

The division of patients into social categories showed that Classes I and V were most frequently affected. Among retired males the highest incidence was found among those who had previously been employed in commerce, finance and insurance, followed closely by administrators and directors. This may have been due to such persons having taken up potentially heavy work (e.g. gardening), after retirement.

Miscellaneous

Diseases of the gall bladder showed a patient consulting rate of 2.9 per 1,000 at risk with women being affected three times more often than males. There was a greater frequency in both sexes with increasing age.

Cirrhosis of the liver was rare (0.1 per 1,000).

CHAPTER VI

SKIN DISEASES

Dr. R. N. R. Grant

General Incidence

In this Survey about one-tenth of the consultations taking place in the doctor's surgery were concerned with lesions of the skin. During the year about one-fifth of the patients who came to consult him came because of skin lesions on at least one occasion.

The largest single group of skin diseases responsible for this was the group of infections made up of boils, carbuncles and cellulitis. These possibly may not be considered as pure dermatology, but they were included in this Survey among the skin diseases. This group accounted for about one-third of the total.

The next largest group comprised dermatitis and eczema, followed in descending order of frequency by urticaria, impetigo, acne vulgaris and other diseases of the sweat and sebaceous glands, styes and blepharitis, warts, anogenital pruritis, dermatophytosis, otitis externa, diseases of the hair and hair follicles, chilblains, and psoriasis.

The figure of 10 per cent of total consultations was rather larger than that which would be included under the heading of "diseases of the skin and cellular tissue" for much dermatology found its way into other categories such as pityriasis versicolor, strawberry dermatitis, various urticarias, allergic and sensitivity eczema, atopic dermatitis, allergic skin reactions, varicose eczema, solar dermatitis, and traumatic dermatitis. There were also those which encroached on E.N.T. or eye territory, such as blepharitis and otitis externa, which are clearly more dermatological problems than the concern of the other specialities.

It was unfortunate that the largest group of skin diseases proper was that in which nomenclature was a great difficulty, and the reason for this was twofold. First, there is the matter of teaching. Some dermatologists still teach their students to avoid the use of the word "dermatitis" in order to avoid excessive difficulty over compensation, thus throwing a great number of conditions into the eczema category. On the other hand, other dermatologists like to be precise and name many more as dermatitis, suitably qualified.

Second, general practitioners appear to be able to deal with most incidents of skin disease in two to three consultations so that many of them get better before it is possible to make an adequate or accurate diagnosis.

Thus we have the phenomenon that in the South Western Region twice as much eczema occurred as dermatitis, whereas in Wales three times as much dermatitis occurred as eczema, but the total incidence of dermatitis plus eczema was almost identical in the two areas.

So far as the general practitioner is concerned, a given eruption may be specified under any of six or more different international classification numbers, according to the name which he has been taught or chooses to give it.

The General Register Office produced several special supplementary tables covering nine practices, classifying diseases by the exact terminology used by the different practitioners. This I thought would be very useful in obtaining a detailed breakdown, but I found the majority of conditions still occurred under three categories: dermatitis, eczema, and urticaria not otherwise specified.

Acne vulgaris, varicose eczema and psoriasis appear from these tables to be the three next most common diagnoses.

In order to clarify this point further, I have analysed the cases occurring in my own practice during the Survey year. I thought, but I turned out to be wrong, that my diagnostic ability might be slightly better than that of my colleagues in the Survey. My practice consisted of slightly more than 2,500 patients. I made 600 skin diagnoses in the year in 553 patients. Boils, carbuncles and cellulitis accounted for 134 diagnoses in 125 patients, and the dermatitis/eczema group accounted for 131 diagnoses in 130 patients. The next largest group was urticarial rashes, which probably included many flea-bites, accounting for 56 diagnoses.

Of the dermatitis/eczema group, 51 patients attended for conditions which cleared rapidly with general advice, and for which no final diagnosis was possible; these 51 patients required only 62 consultations. Of the 131 patients diagnosed, roughly one-third were probably mainly exogenous, and one-third mainly endogenous. I thought that all were due to a combination of constitutional factors, the effect of degreasing agents, and minor irritants. Twenty-five patients in this group suffered from seborrhoeic dermatitis. The average number of consultations per diagnosis was somewhere between two and three.

Of the definite exogenous factors diagnosed, nappy rash was the commonest with nine diagnoses, that due to self-applied medicaments seven diagnoses, sensitivity to wool six, occupational dermatitis five, sensitivity to sun two, to detergents two, and one each due to sensitivity to flour, chromium, horse hair, shaving soap, and shirt material.

Influence of age

Certain conditions seemed to decrease steadily in frequency with increasing age. These were herpes simplex, scabies, pediculosis, urticaria, styes, boils, impetigo and warts; whereas herpes zoster, malignant growths, pruritus and chronic ulcers become more common with age.

The benign neoplasms and the dermatitis/eczema group remained more or less constant at all ages, except in infancy where there was an increased incidence of eczema. In childhood the incidence of skin conditions was steady, but dermatitis and eczema are commoner in babies and children up to school age. Warts, boils, and dermatophytosis occurred most frequently in school-children.

A few conditions showed an increased incidence in the middle-aged groups, such as dermatophytosis, chilblains, psoriasis, diseases of the hair and hair follicles (which were mainly types of alopecia), seborrhoea capitis, and diseases of the sweat and sebaceous glands (mainly acne vulgaris).

The effect of sex

Men in all age groups seemed to be more liable to infections of the skin than women. This applied particularly to boils, carbuncles and impetigo. In the middle-aged, men were more affected by alopecia, seborrhoea capitis, and dermatophytosis. Skin sepsis in men over 65 was not affected by whether they were working or not, but among retired males, administrators and directors seemed to suffer more than their share of boils.

Women were affected twice as often by herpes simplex and rosacea, although this difference may have been due to the fact that they were more worried about their appearance, and therefore were more likely to consult. Women appeared four times as often complaining of chilblains, which was perhaps the price they pay for having less dermatophytosis. The fact that

women consulted twice as often with anogenital pruritus would appear to support the idea that the irritation is associated with a mucus leak.

Influence of area

I have already commented on the difference due to local nomenclature, but the only significant difference in incidence which was noted was that chronic ulcers of the skin were remarkably uncommon in Wales.

Influence of the general practitioner in individual practices

The supplementary tables produced for me by the General Register Office for nine particular practices showed that the number of patients consulting for skin diseases varied directly with the interest that the particular doctor took in diseases of the skin. One doctor who obviously did his best to make accurate diagnoses was consulted by three times as many patients as another who made only the vaguest of diagnoses. Perhaps the best illustration of this was that the incidence of acne varied from one case per 100 patients at risk to one for every 700 at risk, in practices of comparable size.

The influence of regional teaching on nomenclature is also brought out by these tables.

Influence of social class

The tables showing the influence of social classes and occupations unfortunately did not give figures for skin diseases in adults other than those for boils, carbuncles, and cellulitis, but there were a few interesting observations to be made from these.

Among males aged 15-64, boils and carbuncles did not seem to be respects of social class in any way, whereas cellulitis of finger and toe in the Social Classes II to V was twice as high as in Class I.

The same trends can be observed in children, in so far as boils, carbuncles and cellulitis were concerned, but there were also figures for urticaria, impetigo and eczema in children. These showed that impetigo had a direct relationship to social class, increasing steadily from Social Class I to V. Eczema showed no class distinction whatever, and urticaria showed an incidence which require some explaining, in that the order of increase was shown to be Class I, Class II, Class V and Class IV, and the maximum in Class III.

The effect of occupation

In spite of the equality of class incidence of boils, there were some astonishing figures in regard to occupations. It appeared that mine-workers suffered approximately three times the average number of boils, whereas agricultural workers had about half the average, and this was also reflected in their children.

Mine-workers achieved high figures in all septic skin diseases but the reason for their suffering three times as much skin sepsis as agricultural workers seemed difficult to discover. The need for certificates, the degreasing effect of soap and water, sunshine, fresh air, and natural antibiotics in the soil may have played their parts.

The children of textile workers had three times as much urticaria as the children of agricultural workers, whilst eczema showed little significant occupational variations. Impetigo, however, seemed to vary directly with the dirtiness of the father's occupation.

With regard to the incidence of boils in manual non-agricultural workers, it was interesting to note that foremen suffered more boils than skilled and semi-skilled workmen, who in their turn had more boils than the unskilled.

GENERAL CONCLUSIONS

The general practitioner appears to be able to deal with most incidence of skin disease in two to three consultations and without making a definite or detailed diagnosis.

Agreement among dermatologists on nomenclature in the dermatitis and eczema groups would help.

Boils have a significantly different aetiology from other skin sepsis.

CHAPTER VII

DISEASES OF BONES AND ORGANS OF MOVEMENT

Dr. P. A. Walford

This chapter includes the following conditions (patient consulting rates per 1,000 at risk):

1. Muscular rheumatism (excluding any of the conditions named below)	28.7
2. Osteo-arthritis (arthrosis) and allied conditions	11.2
3. Synovitis, bursitis and tenosynovitis	10.2
4. Lumbago	9.4
5. Rheumatism unspecified	7.9
6. Other diseases of joint and musculo-skeletal system	7.0
7. Arthritis unspecified	5.9
8. Displacement of intervertebral discs	5.0
9. Rheumatoid arthritis	4.8
10. Pain in limb	4.0
11. Pain in back	3.5
12. Sciatica	3.5
13. Pain in chest	3.3
14. Brachial neuritis	1.8
15. Flat foot	1.4
16. Hallux valgus and varus	0.6
17. Internal derangement of knee joint	0.6
18. Osteitis deformans	0.3
19. Spondylitis ankylopoietica	0.2

This chapter therefore includes all the conditions (except rheumatic fever and gout) which shelter under the rather ill-defined umbrella known as rheumatism. For convenience it also includes a number of other unassociated affections of the organs of movement.

The rheumatic diseases are high on the list of diseases which bring patients to the doctor. Lawrence (1) found that N.H.I. statistics showed an annual loss of twenty-eight million man-days from rheumatic diseases alone, and Kersley (2) that one-sixth of the invalidity of the insured population is due to rheumatic disease. In this Survey one patient in every nine on list consulted for rheumatism, and among the older age groups the figure rose to about one in six.

Right from the outset difficulties of nomenclature and definition beset us. Only if a disease can be clearly defined can statistics referring to it be really accurate; if in addition to lacking a clear definition it is known by different names in different parts of the country, and if, as is the case in several of the

conditions considered in this chapter, its very existence is held by some to be in doubt and certainly its aetiology disputed, then it is unreasonable to expect the sum of the figures collected by a large number of observers with varying viewpoints to be of the highest significance. Wide variations in incidence in different regions and for different occupations are not necessarily significant. Attention has not been called to them where careful examination of all the relevant Survey tables has seemed to suggest that they are fortuitous.

It is as well to be forewarned of some of the types of trap which these figures set. For example, it will be observed that those holding the highest administrative posts consistently reported less often with all forms of rheumatism than the remainder of the population; it might be argued that they suffer less because they have a higher income, are better housed and better fed; but there is no actual proof that they did suffer these diseases less often than others, only that they attended their doctors less often, and this might have been for a variety of reasons the most obvious of which is that economic necessity did not compel them to attend for medical certificates. Another possible explanation is that some top level executives have two practitioners, one in the country and one in Town.

Textile workers appeared to have a very high incidence of osteo- and rheumatoid arthritis. Was this in some way produced by their work or is it possible that if they get arthritis it interferes excessively with their work and sends them to the doctor? How evenly were they distributed? If they all fell into the practice of one or two practitioners could this explain the high figures? In male textile workers it is important to notice that their incidence of "Arthritis unspecified" was not unduly high; in contrast, for instance, with miners who had a high incidence of "Arthritis unspecified" and average figures for "Osteo-" and "Rheumatoid arthritis". We have no means of knowing how many cases of the two latter were included as cases of unspecified arthritis, but there must certainly have been enough to interfere with the accuracy of these figures.

The Welsh suffered from flat feet about as commonly as other Britons, but they were seen by their doctors two or three times as often. Does this mean that their flat feet were for some reason more disabling? Probably not; the number of Welsh at risk was comparatively small and one doctor with a particular interest in following up his flat-footed patients could influence the figures markedly.

Enough examples have been given to show that caution is required before drawing unwarranted conclusions from these tables.

Muscular Rheumatism

To make the best use of the figures collected here, it is helpful to consider present-day hypotheses about muscular rheumatism and to see how far they can be supported or disproved by these figures. It has been customary for generations to label a muscular pain without obvious cause as "rheumatic" or "fibrositic", but this is no longer universally accepted and a number of alternative opinions now hold the field.

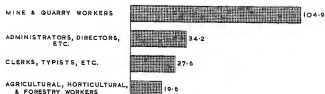
On the one hand is the view that the pains formerly ascribed to fibrositis are referred from lesions in and about the spine; and according to this view just as pain in the lower limb is commonly found to be referred from the lumbar spine, so pain in the upper limb often originates in the cervical spine, while the various pains in the front and back of the chest loosely called intercostal neuritis or pleurodynia may be referred from either the cervical or the dorsal spine.

Diagram 21



The three main groups of rheumatic disease.
Patient consulting rates per thousand at risk.

Diagram 22



Muscular rheumatism by certain occupations.
Patient consulting rates per thousand at risk for males aged 15-64

On the other hand the psychosomatic school uphold the view that psychogenic rheumatism or tension pain is the dominant cause of these symptoms. Halliday (3) when acting as a medical referee in Scotland found that 39 per cent of 145 consecutive patients seeking insurance benefit who were labelled rheumatic were in fact incapacitated by reason of psychoneurotic disorders, while Flind and Barber (4) reported that 42 per cent of patients admitted to a R.A.F. special rheumatic centre were suffering from psychoneurotic disorders. "The psychiatrists consider that many attacks of so-called fibrositis are no more than escapist phenomena - that they represent in physical effect the mental outlook of the individual as instanced by the painful stiff back of the man who does not bow easily to authority - or they act as a means of obtaining sympathy or less exacting employment." - Kersley (2).

Copeman (5) also has shown that some cases are due to herniation of fat lobules.

Among aetiological factors may be infection, trauma, exposure, fatigue and climate. "Many authors regard cold, above all cold and damp conditions, as causative of rheumatism... Against this supposition is the fact that people like the Eskimos and Lapps greatly exposed to cold and mist do not suffer from rheumatic troubles... the evidence shows that it is conditions produced by dirty, artificially heated and ill ventilated houses which cause... rheumatic troubles, the ill effect of these conditions being intensified by a diet in which protective foods are often deficient." - Hill (6).

As the doctors taking part in this Survey were allowed to use their own diagnostic labels, it comes about that there are columns in the tables headed "Other muscular rheumatism" and "Rheumatism unspecified" as well as those rather unscientifically headed "Pain in limb" "Pain in chest" and "Pain in back". And no doubt cases that some practitioners have placed in the above classes would have been classified by others as neuroses or prolapsed discs.

Turning to the tables in Volumes I and II the column headed "Other muscular rheumatism" is the nearest approach to a series of cases of what most practitioners would call "muscular rheumatism". Here the sex incidence was remarkably equal. Those who relate all muscular rheumatism to lesions of the spinal column will notice that the numbers increased with age until the 45 to 64 age group after which they fell, much as happened in the case of prolapsed intervertebral discs, but the sex incidence of prolapsed discs is not reproduced nor is the regional incidence, though on account of the small number of practitioners involved in certain regions the latter figures are not reliable.

The influence of working conditions, but not necessarily of work, is shown by the extremely high incidence of muscular rheumatism in miners (Diagram 22), though it should be pointed out that this group has a high morbidity rate for many disorders. In Tables 4a and 4b of Volume II miners are considered together with quarry workers, and the proportion of the latter in this occupational order is not known though it is small, but together they reported with muscular rheumatism seven times as commonly as another group of manual labourers, namely the agricultural, horticultural and forestry workers, who had the lowest incidence of anyone in the community. The low incidence in agricultural workers is in itself rather striking as they work in what might be expected to be adverse conditions, are not always well housed and are among the lowest paid workers. Is it possible that living on the land their diet may be healthier than that of other groups? Whether this is the explanation or not, consistently fewer patients reported with muscular rheumatism in rural districts than elsewhere. Among the miners one in ten at risk was diagnosed as having muscular rheumatism during the twelve months. There is no absolute evidence as to why this was so, but it must almost certainly be

associated with conditions of work; if housing conditions played an important part the high incidence might be expected to continue after retirement which it did not.

Although the professional classes suffered least, there is not sufficient difference among the various social classes to suggest that either housing, income or education played an important part. Climate seemed to be of some importance; there was an increase of some 20 per cent in non-articular rheumatism during the months of January to May; in July and August there was a brisk decline which might perhaps be due to the absence of both patients and their doctors on holiday. The figures for the South of England were well below those for the North, Midlands and Wales.

The above findings apply where practitioners made a definite diagnosis of muscular rheumatism; where they simply wrote "rheumatism" the figures will be found under the heading of "Rheumatism unspecified". This probably represents a hotch-potch of undiagnosed pains, and the picture here is very different. Twice as many women as men were affected and the incidence continued to rise steeply with age. The picture, in fact, is more that of arthritis and it is therefore possible that many of the pains of the elderly which were loosely labelled rheumatism were in fact due to arthritis.

Osteo-arthritis (arthrosis) and allied conditions

Osteo-arthritis presented as a disease primarily of middle and old age. Women accounted for twice as many cases as men at all ages. The number of admissions to hospital for "arthritis and rheumatism" as a whole was 392 cases, 74 being osteo-arthritis, 89 discs and sciaticas, 73 rheumatoid arthritis.

If anything, the disease was diagnosed slightly more often in the towns than in the country, and the East and West Ridings represented mainly by urban practices had the highest rate; but on the whole the distribution was fairly uniform.

Except that those in the highest administrative posts had a rather low incidence of osteo-arthritis, the manual worker and his black-coated colleague seemed to develop this disease about equally commonly (Diagram 23). The miners who suffered so severely with muscular rheumatism, lumbago and sciatica did not appear to get more than the average share of osteo-arthritis. Figures for other workers did not show any clear trend: only the textile workers seemed to suffer more commonly than their fellows; it would be interesting to know which joints were affected.

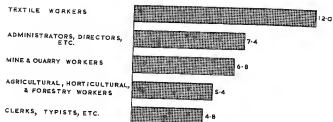
It is interesting that although there often seems to be an element of trauma in the causation of osteo-arthritis, there is no evidence from these tables that hard manual labour contributes in any way. Puzzling is the appearance of foremen near the top of the list as indeed they seem to be near the top of the list in many other rheumatic diseases, a position not shared by their female counterpart the overlooker.

The accident of geography made no very consistent difference, though on the whole the rural practitioners saw less than the urban ones and those in the South unexpectedly saw more than those in the North.

Lumbago

Lumbago, pain in the back, sciatica and displacement of intervertebral discs are most conveniently considered together. The Survey figures for prolapsed intervertebral discs include cervical and thoracic as well as lumbar discs; displacement of a thoracic disc is, however, rarely diagnosed at present, and cervical discs are said to form only 4 to 6 per cent of all disc lesions, so that

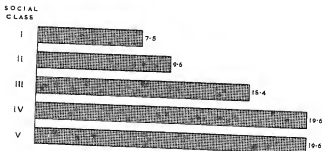
Diagram 23



Osteoarthritis.

Patient consulting rates per thousand at risk for males aged
15 - 64, by certain occupations.

Diagram 24



Lumbago by social class. Patient consulting rates per thousand
at risk for males aged 15 - 64.

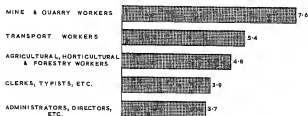
at least 90 per cent of the cases diagnosed as "discs" were probably thought to have prolapsed lumbar discs. Consultations per thousand for all these conditions varied widely in different regions, and in different types of practice, but the difference may be more apparent than real and may represent local variations in diagnostic habits.

Miners and quarry workers easily head the list for lumbago with more than twice as much as other workers. As we go down the social scale the incidence rises appreciably, presumably associated with increased manual work (Diagram 24). Transport workers had a particularly heavy incidence but farm labourers came off better than other unskilled workers. Sedentary workers on the whole had a low incidence and men outnumbered women by about three to two at most ages.

What exactly individual practitioners meant by "lumbago" as opposed to prolapsed disc or pains in the back we don't know for certain, but probably the expression "pain in back" was reserved for the more chronic sort of backache where women outnumbered men by nearly two to one, whereas men with lumbago easily outnumbered women.

If by sciatica is meant sciatic neuritis, this condition probably does not exist, most cases being due to mechanical causes such as protrusion of inter-vertebral discs, or other lesions compressing the nerves or posterior roots. It was diagnosed as often in males as in females and the incidence increased with age up to the 45-64 group and then became stationary. Sedentary workers suffered least. Agricultural workers suffered one-third less sciatica than did mine and quarry workers (Diagram 25). Broadly speaking, therefore, sciatica behaved in a rather similar fashion to lumbago, as might be expected.

Diagram 25



Sciatica by certain occupations.

Patient consulting rates per thousand at risk, for moles aged 15-64.

The high incidence of lumbago and sciatica among those employed in transport and communications suggests further research into the design of driving seats for vehicles.

Prolapsed discs were diagnosed as such more often in males than in females, and the highest incidence for both lumbago and prolapsed discs was in the age group 45-64, this being succeeded by a sharp fall in the 65's and over; but sciatica curiously enough continued to be diagnosed as commonly after 65 as before. This raises the question whether in the elderly pain from

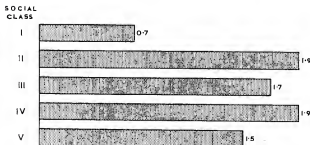
osteo-arthritis of the hip was being called sciatica. Unfortunately we have not got the occupational incidence of prolapsed discs and although great variation is apparent between various regions (for example, Wales 1.1 per thousand at risk and the East and West Ridings 8.2 per thousand) there is not enough information to show why. It would have been of the greatest interest, for example, to know whether the high incidence of sciatica among miners is offset by a low incidence of prolapsed discs diagnosed as such: it is not possible simply on a high incidence of sciatica to state categorically that miners have a higher incidence of prolapsed discs than other workers. Eighty-nine cases of prolapsed disc and sciatica were hospitalised, the highest number for any disease in this section.

Rheumatoid arthritis

Rather more than three times as many women as men consulted with rheumatoid arthritis, a relationship which was constant at all ages, and as might be expected the number of consultations from sufferers with this disease was high. A tendency for rheumatoid arthritis to affect the later age groups is reflected in the figures which show that it was responsible for more consultations in the over sixty-fives than in the under sixty-fives, although of course these elderly patients may well have been sufferers from the late effects of the disease. Only small variations occurred from one part of the country to another, but in different types of practice and in different trades there are bigger differences; it is, however, impossible to attach significance to these variations in view of the unknown number of cases of rheumatoid arthritis that may be included in the figures for "Arthritis unspecified", in which variations often occur in the opposite direction.

If we ignore this serious cause of error, remarkably high figures are found in farmers and textile workers for which no explanation is offered. It is noteworthy that farm labourers had only one-third of the incidence of their employers and another curious thing is the extraordinary variations in the number of times different classes of patient with rheumatoid arthritis consulted their doctors; for instance, the highest administrators had on an average 1.4 attendances during the year, clerks and typists 3.5, shopkeepers 10 and personal servants 21.

Diagram 26



Rheumatoid arthritis by social class. Patient consulting rates per thousand at risk for males aged 15 - 64.

The high figure for male textile workers persisted after retirement which seems to show that they were not simply consulting their doctors because the disability interfered with their work; furthermore, they showed a high incidence of "arthritis unspecified", and among working males aged 15-64 they topped the list of osteo-arthritis, so that unless there was something freakish about their distribution among the practitioners it is difficult to avoid the conclusion that their working conditions must have played some part in giving them this high incidence of arthritis of all sorts.

Administrators and directors have the lowest incidence of rheumatoid arthritis but apart from the fact that the professional classes seem on the whole to be less affected than others no clear general trends are discernible (Diagram 26).

Pain in chest

This means pain in the chest of non-cardiac or pulmonary origin. It includes such vague entities as pleurodynia and intercostal pain and is really much commoner than the Survey figures suggest, because cases diagnosed as intercostal fibrositis, neuritis and rheumatism have been removed to their appropriate columns.

The psychiatrists have long since staked out a claim to some of these pains, and in particular to left submammary pain. On the other hand the practitioners of physical medicine put up a good case for annexing the territory. They believe that these pains are referred from the spine, either thoracic or cervical. In this connection the sex incidence of chest pains is interesting, because they occurred more often in men than in women at all ages, and this would certainly be an unusual finding for a psychogenic pain. Chest pains seemed to be commonest in the 15 to 44 age group, and to fall steadily thereafter.

Brachial neuritis

It is doubtful whether this condition exists. So-called brachial neuritis may be due to compression or irritation of posterior roots by a protruding intervertebral disc or cervical spondylosis, pressure on the brachial plexus by a cervical rib or by drooping of the shoulder girdle in the axillary inlet syndrome or injury of a peripheral nerve, for example, friction to the ulnar nerve at the elbow or compression of the median nerve in the carpal tunnel.

Beyond remarking that the condition is least commonly diagnosed in the South Western Region and most commonly in the Northern Region, and that the incidence is twice as high in women as in men, with an age incidence comparable with that of prolapsed discs in general, there is nothing further that can be usefully said about it.

Spondylitis ankylopoietica

Two men were recorded for every woman having this disease. This figure differs markedly from that of most other series which give an incidence of about nine or ten men for every woman. The figures are small and no conclusions can be drawn from them.

Synovitis, bursitis and tenosynovitis

These three minor ailments have been grouped together for convenience. The worst sufferers were the miners and quarrymen, in whom they are clearly occupational, since after retirement these workers suffer less than anyone else. These two occupations excepted, the conditions are fairly evenly distributed both occupationally and geographically and both sexes are equally

affected more especially at the height of their working lives. No doubt if these three ailments were considered separately, marked occupational variations would become apparent.

Rheumatism unspecified

Although the figures for "Rheumatism unspecified" have been broken down in considerable detail there is nothing to be gained by analysing them when it is not known what they represent.

Pain in limb, other diseases of musculo-skeletal system

The figures referring to these two headings have not been analysed.

Flat foot

This is recorded most commonly in children; no doubt the majority of them painless examples picked up in infant welfare clinics. The female sex seems to be slightly more affected than the male at most ages. Occupational figures are not available. On the average each case was seen rather less than twice.

Hallux valgus and varus

The relatively high incidence of hallux valgus among children confirms the belief that it is congenital rather than due to the wearing of any special type of shoe. Nine cases were observed under the age of 4 and 22 between 5 and 15. Even in children, females were more affected than males. There was marked variation in the incidence in different regions; for instance, it was diagnosed five times as often in the Southern as in the Northern Region but it is doubtful whether this variation has any significance.

Internal derangement of knee

This condition chiefly affected males in the prime of their athletic life. No further deductions can be drawn from the figures.

DISCUSSION

The mass of figures presented in the Survey tables emphasizes the importance of the diseases of the organs of movement and particularly of the rheumatic diseases and helps to get them into their right perspective. That it does not shed as much light on them as it might have done, in spite of what appear to be remarkable geographical and occupational variations in the incidence of some of them, is due to uncertainty as to how much reliance can be placed on these figures. This distrust is due not to any lack of faith in those who so unsparingly worked to collect and collate the figures but to other factors and especially to our fundamental ignorance of the cause of these conditions, particularly the commonest - muscular rheumatism, which has led to inconsistency in the use of diagnostic labels which in its turn has led to vitiation of the statistics to an unknown extent.

Nor has the WHO code proved ideal for this purpose as it sometimes allows a choice of three or more categories into which a case can be fitted with consequent loss of statistical accuracy. The lesson to be learnt is that in any future survey of these diseases in general practice it will be necessary to use a watertight classification, a matter which the College of General Practitioners has under very active consideration.

The figures surveyed in this chapter provide plenty of food for thought and suggest many avenues for research, exploration of which might yield profitable returns. If future planners of general practitioner surveys study these tables carefully they should be able to learn a great deal from them, and turn

their shortcomings to their advantage, making them a splendid springboard for an all out attack on the problems of the rheumatic diseases.

SUMMARY

This chapter surveys the incidence of the diseases of the organs of movement. One patient in every nine on list suffered from "Rheumatism" in some form or other and among the older patients the figure rose to one in six.

After drawing attention to some of the difficulties surrounding the interpretation of the figures in the tables, an attempt has been made to distinguish between those which are significant and those which are fortuitous.

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DISEASES OF THE GENITO-URINARY SYSTEM AND OBSTETRICS

Dr. M. I. Cookson

PART 1. GYNAECOLOGY AND OBSTETRICS

This section consists of normal obstetrics, diseases of the female breast and the gynaecological and abnormal obstetric diagnoses of the Survey. The last three will be called, collectively, feminine ailments and they are as follows in order of frequency (patient consulting rates per 1,000 females at risk):

1. Menstrual disorders	24.1
2. Menopausal symptoms	18.5
3. Complications of pregnancy, labour and the puerperium	15.8
4. Prolapse	6.4
5. Abortion	3.1
6. Benign neoplasms, including breast tumours	3.1
7. Malignant neoplasms, including breast tumours	2.7
8. Salpingitis and oophoritis	0.6
9. Other diseases of the ovary, tube, etc.	0.4
10. Other diseases of the female genitalia	14.3

This whole section accounts for 18 per cent of female patients seen by doctors, and about one-third are normal obstetric cases. The proportion of female patients consulting for feminine ailments was less than one-eighth of those consulting for all conditions and, even in the age group 15-44 where these ailments are at their peak, the proportion was less than one-quarter.

The average number of consultations for each case of a feminine ailment is 3.0, compared with 5.6 per case for all diseases. Consequently, if the number of consultations is considered rather than the number of patients, feminine ailments are an even smaller part of the doctor's work, about one consultation in thirty. On the other hand it must be borne in mind that these consultations, particularly those concerned with abnormal deliveries, may take far more time than the average consultation.

Normal obstetrics

As this Survey is primarily of morbidity, there is relatively little information on normal obstetrics which is not morbid. The total number of patients consulting in respect of normal maternity is known, and, divided by the number of doctors taking part (excluding assistants), indicates an average of 47 cases each. The incidence per 1,000 population is 20.9 indicating that normal maternity cases, during the Survey year, were six times more common than measles (3.1), five times more common than appendicitis (4.0), and about as common as otitis media (19.8), functional disorder of the stomach (21.5), and wax in the ear (21.4). Indeed, apart from upper respiratory infections and muscular rheumatism, no type of case had an incidence much higher than normal maternity.

Complications of pregnancy, labour and the puerperium

In a morbidity Survey of one year's duration, the incidence of complications cannot be related to the total number of pregnancies, because many pregnancies began before the commencement of the Survey period or continued after its end. Furthermore, the total number of pregnancies at risk is not known. Only those attended by practitioners were recorded, and only those with some degree of morbidity analysed. Consequently the findings cannot be compared with those of the more common type of maternity Survey in which a number of complete pregnancies is analysed.

Complications of pregnancy

The complications listed and analysed are as follows in order of frequency (percentage of total illnesses complicating pregnancy):

1.	Toxaemia	38.7
2.	Anaemia	7.5
3.	Pyelitis and pyelonephritis	7.2
4.	Other infections of the genito- urinary tract	6.6
5.	Placenta praevia and other antepartum haemorrhage noted before delivery	3.2
6.	Pregnancy associated with other conditions	1.3
7.	Malposition of the foetus	1.0
8.	Ectopic pregnancy	0.9
9.	Other complications arising from pregnancy	33.6

Ectopics are listed as complications of pregnancy. Abortion, oddly enough, is regarded as a disease in its own right, not as a mere complication. If it were a complication it would appear in the list as a very close second to toxaemia, which would then be responsible for only 28.9 per cent of the complicating illnesses.

The proportion of patients consulting for complications of pregnancy as listed was 4.4 per 1,000 population. To this should be added a further 1.7 per 1,000 for abortion; of the whole, one in five required admission to hospital. The total of 6.1 per 1,000 population indicates that an average general practitioner sees approximately 15 cases of complicated pregnancy per annum, including four each of toxaemia and abortion.

Complications of labour

The complications listed and analysed are as follows in order of frequency (percentage of total illnesses complicating labour):

1.	Laceration of the perineum and other trauma	37.2
2.	Retained placenta or post partum haemorrhage	21.7
3.	Disproportion or malposition of the foetus	9.7

4. Placenta praevia or antepartum haemorrhage	7.5
5. Prolonged labour of other origin	4.4
6. Abnormality of the bony pelvis	1.8
7. Other complications	17.7

The proportion of patients consulting for complications of labour was 0.58 per 1,000 population. This is a remarkably low rate at which the average general practitioner attends only one or two complicated labours each year, one in four requiring admission to hospital. In a ten-year period at this rate he would deal with 5 cases of laceration of the perineum or other trauma, 3 of retained placenta or postpartum haemorrhage, 1 of labour with placenta praevia or antepartum haemorrhage, and 1 of disproportion or malposition of the foetus.

Comparing the average rates of incidence of these complications with Survey rates, it appears that Survey practitioners were dealing with one-fifth to one-tenth of the complicated labours of their practices. For instance, the retained placenta rate, an example of an unpredictable complication, is normally 0.9 per cent (Dutton, 1958 (1)). An average general practice having 2,500 patients and a birth rate of 16 per thousand will produce about 40 babies per annum and therefore 0.36 cases of retained placenta. The corresponding figure for the Survey is 0.08 cases or approximately one-fifth of the numbers that might be expected on the basis of Dutton's figures. As retained placenta is by and large unpredictable, this difference cannot be explained in terms of selection of cases. It is probably an indication of the extent to which supervision of delivery is taken out of the hands of general practitioners by the admission of a large proportion of patients to hospitals.

The incidence of feminine ailments does not vary greatly from region to region, but this is not true of consultations for delivery with complications. This is demonstrated in Diagram 27 from which it is seen that practitioners in the Midland Region had eight consultations for abnormal delivery for each such attendance in London and the South East. The diagram also shows that rural practitioners had about 50 per cent more consultations for abnormal delivery than practitioners in urban or semi-urban areas.

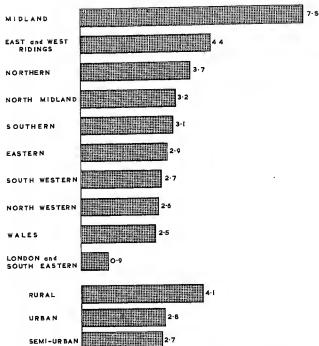
Another curious feature of attendance at abnormal delivery is shown in Diagram 28 from which it is evident that general practitioners' attendance on these cases is minimal in urban districts with populations between 50,000 and 100,000. It may be that this finding is related to the provision of maternity hospital facilities for general practitioners, provision which might well be found to be minimal in medium sized urban areas big enough to support, but not overwhelm, a specialist maternity department, and maximal in smaller urban areas without a resident specialist.

Complications of the puerperium

The complications listed and analysed are as follows in order of frequency (percentage of total illnesses complicating the puerperium):

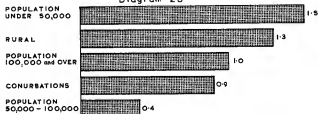
1. Mastitis and other disorders of lactation	73.3
2. Phlebitis and thrombosis	4.1
3. Sepsis	2.3
4. Urinary infection	1.1
5. Pyrexia of unknown origin	0.6

Diagram 27



Consultations for delivery with certain complications in each standard region and type of practice. Rates per thousand females at risk.

Diagram 28



Patients consulting for delivery with certain complications by type of area. Rates per thousand females at risk.

6. Toxaemia	0.4
7. Pulmonary embolism	0.2
8. Eclampsia	0.1
9. Other complications	17.9

The proportion of patients who consulted for complications of the puerperium as listed is 3.4 per 1,000 population, 3 per cent requiring admission to hospital. At this rate an average general practitioner would see eight or nine cases of complications of the puerperium each year, nearly all being disorders of lactation. In a ten-year period he could expect to see three or four cases of phlebitis or thrombosis and one or two of sepsis, but the incidence of all the other listed abnormalities is less than one in ten years.

Notes on abnormal obstetrics

It has already been pointed out that most Surveys of maternity work relate to a series of completed pregnancies, and that comparison with the present Survey is difficult. However, a number of comparisons can be made with a Survey of the obstetric work of 116 general practitioners carried out by the South-West Faculty of the College of General Practitioners (2). Many of these practitioners had a special interest in obstetrics, and the very high proportion of 61 per cent had access to maternity beds.

Antenatally these practitioners attended an average of 13 abnormal pregnancies each, including 6 cases of hypertension. In labour they attended an average of 10 cases each, either for episiotomy, perineal laceration or post-partum haemorrhage, and a few more for other abnormalities.

In the present Survey the practitioners concerned attended an average of 10 abnormal pregnancies each, including 4 cases of toxæmia, which is only a little less than the number attended by the C. G. P. practitioners. In marked contrast, they attended an average of only one or two abnormal deliveries, less than one-fifth of the number attended by the C. G. P. practitioners.

These findings may be explicable in terms of access to, or lack of, general practitioner maternity beds, for the average College Survey doctor supervised 10 deliveries in general practitioner beds, while the average throughout the country is $2\frac{1}{2}$ per annum. If so explicable, it seems that the ordinary general practitioner is responsible for antenatal care of many patients whose delivery he cannot supervise. If he does indeed lack some of the obstetric enthusiasm of the College Survey doctors, it may be that this is partly the cause.

Menstrual disorders

Disorders of menstruation form the largest group of feminine ailments. Their incidence of 12.8 patients consulting per 1,000 population indicates that a general practitioner with 2,500 patients would see about 31 cases each year, but the average number of consultations per patient (2.2) is the lowest of all classified feminine ailments. Almost all were treated by the general practitioner alone for only 4 per cent required admission to hospital during the Survey period.

Menopausal symptoms

Menopausal symptoms were the reason for consultation in 9.8 patients per 1,000 population, which is about 24 cases a year to an average general practitioner, and one case in a hundred was admitted to hospital during the Survey period. Menopausal symptoms and menstrual disorders together form 47 per cent of feminine ailments.

Prolapse

Diagram 29 shows that the incidence of prolapse increases with age from 3.5 per 1,000 females in the child-bearing age group of 15-44 years to 17.7 in the age group 65 years and over, over five times more common. This is due to possession by the uterus of two means of support, the pelvic floor and the cervical ligaments. Either or both may be damaged at delivery. If the pelvic floor alone is damaged, as is more commonly the case, the uterus remains supported by the cervical ligaments; but as these consist largely of smooth muscle continuous with that of the uterus, they atrophy after the menopause. Consequently, damage done at a first delivery at, say, twenty years of age, may not result in prolapse for thirty or forty years, probably after the retirement from practice of the doctor responsible for the delivery. This may be food for thought for any practitioner who observes with satisfaction that he sees cases of prolapse following delivery under the care of his predecessor in practice, but none following his own deliveries.

Prolapse accounted for rather more than 1 per cent of all hospital admissions, but only 18 per cent of cases of prolapse were admitted to hospital during the Survey period.

Abortion

The number of patients consulting in respect of abortion (1.7 per 1,000 population) may be compared with the national birth rate which is now about 18 per 1,000. It is evident that the general practitioner attends only one in ten of his maternity cases in respect of abortion. About one abortion in 100 was described as septic.

Thirty-six per cent of cases of abortion were admitted to hospital, the rate being rather higher in urban (38 per cent) than in rural areas (32 per cent).

Benign neoplasms

The number of patients who consulted in respect of benign neoplasms of the female genital tract and breast is 1.6 per 1,000 population. To the average general practitioner this is approximately four cases per annum, including two cases of fibroids or other benign uterine tumour per annum, and one breast tumour every two and a half years.

Malignant neoplasms

Malignant neoplasms were recorded in 5.4 per 1,000 females, exactly half arising in the breast or genital organs. In the male, the total incidence is 5.2 per 1,000 males, but only one in six arose from the genital organs or breast.

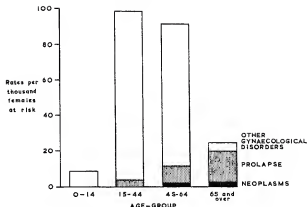
The incidence per 1,000 population of malignant neoplasm of the breast (0.8) and of the uterus (0.3) indicates that our average general practitioner sees two cases and one case per annum respectively.

In the breast and uterus the incidence of benign disease falls with age while that of malignancy rises. In the age group 15-44 years, more than half the breast disorders were benign, but in the age group 65 years and over nine-tenths were malignant.

Diagram 29 shows how the incidence of gynaecological disease is related to age. It is evident that general practitioners dealing with gynaecological cases in the age group 65 years and over can expect one in ten of these cases to have a malignant neoplasm and most of the remainder to have prolapse.

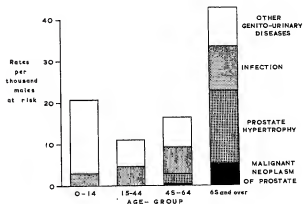
Of all feminine ailments, malignant neoplasm had the highest number of consultations per case (10) this being more than double the next highest, abortion, which had only 4.3 consultations per case.

Diagram 29



Age distribution of patients consulting for gynaecological disorders. Rates per thousand females at risk.

Diagram 30



Age distribution of males consulting for urogenital diseases. Rates per thousand males at risk.

PART 2. OTHER GENITO-URINARY DISEASES

Excluding cases already discussed as feminine ailments, genito-urinary disorders account for 3.1 per cent of the whole and comprise the following (patient consulting rates per 1,000 population at risk):

Urinary tract infection	13.2
Hyperplasia of the prostate	1.2
Hydrocele	0.8
Malignant disease	0.5
Orchitis and epididymitis	0.5
Nephritis and nephrosis	0.5
Calculi of kidney or ureter	0.3
Other genito-urinary diseases	4.6

The total attendance rates are 19.5 patients per 1,000 males, and 23.3 per 1,000 females, 88 per cent of the latter being cases of urinary tract infection. In the male, infection accounted for only 27 per cent of genito-urinary cases.

In the female the incidence of infection was greatest in the age group 15 to 44 years. In the male the incidence of infection, particularly of the bladder, increased steadily with age, and the incidence of calculi in the male was twice that in the female. The average general practitioner sees 33 cases of urinary tract infection per annum, 6 males and 27 females.

Apart from infection, the commonest problem in the male was prostatic hypertrophy, with an incidence rising, as shown in Diagram 30, to 17.6 per 1,000 males in the age group 65 years and over. This incidence happens to be almost identical with that of prolapse in the same age group in the female, but prolapse is more common in the younger groups. Approximately one-third of all cases of prostatic hypertrophy were admitted to hospital during the Survey period. In the prostate, hypertrophy was three times more common than malignancy, the incidence of which is also shown in Diagram 30. The average general practitioner sees three cases of hypertrophy each year, but the incidence of malignancy is rather less than one case per annum.

Malignant disease had the highest attendance rate (10 consultations per case) of genito-urinary diseases. Nephritis and nephrosis required one consultation less per case and had a steady incidence of 0.4 per 1,000 population (one per annum per general practitioner) at all ages below 65 in either sex. Only 20 per cent of these cases were admitted to hospital during the Survey period, and they accounted for almost the same proportion of hospital admissions (26 per 10,000) as pyelitis with a 4 per cent admission rate.

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CARDIOVASCULAR DISEASES

Dr. John Fry and Dr. W. J. H. Lord

INTRODUCTION

The importance of cardiovascular disorders cannot be assessed by figures alone, for diseases of the heart and blood-vessels affect vital organs where the sudden emergency is often a matter of life and death and where any management of the patient tends to be a prolonged, perhaps lifelong, affair.

In this Survey 8.3 per cent of the patients at risk attended for some disorder of the cardiovascular system, but they accounted for a consultation rate of 47.0 per cent of the patients at risk, a figure second only to disease of the respiratory tract.

From the figures of incidence it is apparent that the diseases of the cardiovascular system were those associated with degenerative processes, for there was a very marked rise of incidence with age.

Age distribution of cardiovascular diseases

	All ages	0-	15-	45-	65 and over
Patient consulting rates per 1,000 at risk					
Males	59	24	28	79	200
Females	125	25	71	129	260
Persons	83	24	51	106	236
Consultation rates per 1,000 at risk					
Males	372	57	83	560	1,700
Females	557	57	186	670	2,048
Persons	470	57	142	619	1,909

There was also a marked difference of incidence by sex. Women seemed to be twice as susceptible to diseases of the cardiovascular system as men.

When we turn to look at the specific conditions which accounted for the high incidence of cardiovascular disorders we find that in order of frequency they were:

1. Hypertension
2. Anaemia
3. Coronary artery disease
4. Chilblains.

Included in this section were haemorrhoids, varicose veins and cerebrovascular conditions, but it is difficult to accept these as primary cardiovascular conditions.

The frequency of the most common cardiovascular conditions varied with age.

The three most frequent cardiovascular disorders at various age groups - patient consulting rates per 1,000 at risk

0-	15-	45-	65 and over
Anaemia 4.5	Anaemia 15.0	Hypertensive disease 26.9	Hypertensive disease 62.6
Chilblains 3.3	Chilblains 4.9	Anaemia 15.4	Coronary artery disorders 30.6
Rheumatic fever 0.8	Hypertensive disease 2.1	Coronary artery disorders 11.9	Cardiac failure 18.6

Certain aspects of hypertension, anaemia and coronary artery disease are of the greatest importance to the general practitioner.

Diagnosis and management

The family doctor is faced with many problems in the diagnosis and management of cardiovascular disorders and his task is not lightened by vague and confusing nomenclature.

Difficulties in diagnosis also complicate matters. In accepting a diagnosis of "anaemia" one would like to assume that confirmation has always been obtained by blood examination, but it is impossible to say in how many cases of "anaemia" recorded in the Survey the diagnosis was so confirmed.

Similarly for the sake of accuracy one would like to be sure that diagnosis of coronary infarction had been confirmed by an electrocardiogram, but here again it is impossible to establish the diagnostic criteria used by individual doctors.

Diagnostic criteria for "hypertension" vary also and there may well have been variation in individual interpretations. Factors such as these had to be accepted in order to arrive at useful results.

Statistical figures collected over a period of a year, as these were, give no indication of the chronicity of many of the cardiovascular conditions met with. Thus they fail to reflect the amount of management these diseases require and the high proportion of work they occasion among the elderly. The natural histories of hypertension, anaemia, and coronary artery disease are to be measured in decades rather than weeks, months or single years.

HYPERTENSION

In the tables hypertension is referred to under two headings "Hypertensive disease without mention of heart" and "Hypertensive heart disease".

Reference has already been made to the difficulties in agreement on a definition of "Hypertension" and it must be assumed that the family doctors in this Survey used roughly comparable criteria - perhaps a persistent diastolic pressure of over 100 m.m. Hg. Experienced family doctors would have found it quite easy to discount the occasional "hypertension" whose blood pressure was raised on only single occasions, for various emotional or other reasons.

These variable diagnostic interpretations by the doctors who took part in the Survey must be accepted and further allowance must also be made for the

incomplete representation due to the one year duration of the Survey. No accurate picture of the total incidence of hypertension in the community can be given because only those patients who were seen by the family doctor were recorded and only those who actually had their blood pressures taken were diagnosed. Thus the figures can give only a limited idea of the natural history of the condition, though a useful bird's eye view of one year's morbidity can be obtained.

Incidence

Over this year there were approximately 100 consultations per 1,000 of the population for hypertensive disease and 18 per 1,000 of the patients at risk came to the doctor on this account. In those over the age of 65 the rates were 416 and 63. As will be shown females outnumbered males by almost 3 to 1.

Influence of age

The incidence of hypertension, as might have been expected, increased with age, as did the complication of heart involvement.

Age distribution of hypertension and hypertensive heart disease - patient consulting rates per 1,000 at risk

	All ages	0-	15-	45-	65 and over
Hypertension	15	—	2	26	57
Hypertensive heart disease	1	—	0	1	6

Influence of sex

The incidence of hypertension was almost three times higher in females than in males. This is a fact not often mentioned in textbooks because the consultants who write these books only tend to see the complications and here there is a much less apparent sex difference. In this study the rate of cardiac complication differed by only 3 : 2 between females and males. Men with hypertension, therefore, appear twice as likely to suffer cardiac complications as do women. This supports the clinical impression that the prognosis of hypertension is very much worse in men than in women.

When the rate of consultations is examined (see Table 9 of Volume I) it is found that men required a slightly higher proportion of attendances for hypertension and its complications than did women.

Age and sex distribution of hypertension and hypertensive heart disease - patient consulting rates per 1,000 at risk

	All ages	0-	15-	45-	65 and over
Males					
Hypertension	7.5	—	1.4	14.0	31.3
Hypertensive heart disease	0.8	—	0.0	1.3	4.3
Females					
Hypertension	21.0	—	2.6	35.9	74.1
Hypertensive heart disease	1.2	—	0.0	1.2	6.5

These rates are seen to rise with age, being more than twice as high in the over 65's as in the 45-64 age group.

Influence of geography

Urban practices appeared to have a slightly higher incidence of hypertension than those in rural areas. The highest regional rates for hypertension were in Wales and the North and the lowest were recorded in the Southern and Midland Regions.

Cardiac complications, on the other hand, were highest in the South Western Region and lowest in the Eastern Region, though since the numbers being dealt with here are relatively small, habits of nomenclature might have had a significant effect on this distribution.

Social and occupational influences

In males aged 15-64 the highest patient consulting rates were noted in textile workers, managers and administrators, shopkeepers, foremen and those engaged in "personal service" - showing quite a marked preponderance of those who carried a good deal of responsibility. The lowest rates were recorded for coal miners (who surprisingly suffered much more often from minor ailments than from more serious conditions), agricultural workers, electrical engineers, building workers and shop assistants.

In females, the highest rates were recorded in shopkeepers and the lowest in overlookers.

There were few very marked differences in the distribution of hypertension amongst the various social classes, viz:

Social class distribution of hypertensive disease
Males aged 15-64

	All Social Classes	I	II	III	IV	V
Patient consulting rates per 1,000 at risk	6	8	9	6	5	6

Admission to hospital

Only one out of every hundred hypertensives required admission to hospital during the year of the study. This emphasises the fact that the family doctor is coping himself with almost all of these patients, outside the hospitals.

ANAEMIA

Although there are a number of different specific types of anaemia recognised by pathologists and physicians, in general practice there are for practical purposes two types only - pernicious anaemia and iron-deficiency anaemia. This difference is of vital importance with respect to diagnosis and subsequent management.

The doctors taking part in this study were not given any instructions as to nomenclature and were not asked to restrict their description of "anaemia" to any set terminology. All that was done was that in the final analysis all cases were grouped into the groups of "pernicious anaemia", "iron-deficiency anaemia", "other anaemias of specified type" and "anaemias of unspecified type". It is probably quite in order to accept that most of the anaemias apart from those labelled as pernicious anaemia were of the iron-deficiency type and to consider them together.

The importance of anaemia is great for two reasons. Firstly it causes a good deal of ill health and suffering and secondly it is an eminently treatable condition in the vast majority of cases. It should be diagnosed early, the causes defined and established and the correct treatment applied with gratifying results.

Anaemia is a relatively frequent condition in the community. In this Survey the rate for known cases was 14 per 1,000 and there may well be twice or even three times as many undiscovered cases with poor health in the population. When adult women are considered the rate was around 28 per 1,000.

Age and sex distribution of all anaemias - patient consulting rates per 1,000 at risk

	All ages	0-	5-	15-	45-	65 and over
Males	4.4	5.7	3.1	1.8	4.9	14.0
Females	22.7	4.4	5.4	26.8	24.5	32.7
Persons	14.1	5.0	4.2	15.0	15.4	25.4

The age and sex incidence are of the greatest interest.

Women outnumbered men by 5 : 1 in the whole population under scrutiny but these sex differences varied at different ages, the proportion being almost equal in children, nearly 15 : 1 in the active adult productive period, 5 : 1 in middle age and only 2 : 1 in the elderly (Diagram 31). It is interesting to note that male infants had a higher rate than female infants, a fact that confirms clinical impressions.

Sex differences of anaemia

	All ages	0-	5-	15-	45-	65 and over
Female/Male	5.2	0.8	1.7	14.9	5.0	2.3

These differences are almost certainly accounted for by the loss of iron during the menstrual periods, a loss that is never fully made up, even by the time women reach old age.

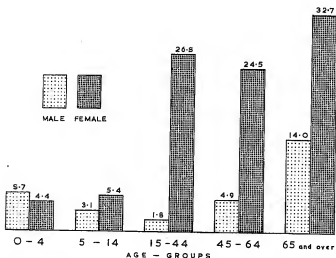
It is somewhat surprising, but most important, to note that the incidence of anaemia is greatest in the elderly. This is almost certainly the result of inadequate nutrition and of an ageing haemopoietic system. The practical importance is obvious when applied to treatment, for the outlook and well-being of an elderly person can be completely transformed by a few iron tablets each day. It is interesting to compare the different age and sex patterns of pernicious anaemia with those of the other types.

Age and sex distribution of pernicious anaemia - patient consulting rates per 1,000 at risk

	All ages	0-	15-	45-	65 and over
Males	1.3	-	0.1	1.6	7.7
Females	2.7	-	0.4	3.2	11.8
Persons	2.0	-	0.3	2.5	10.2

It appears that 2 out of every 1,000 of the Survey population suffer from pernicious anaemia, so that there are approximately 100,000 such patients in the British Isles. This figure of 2 per 1,000 must be accepted as an accurate one, for it is inconceivable that there are many undiscovered subclinical cases in a community. Sooner or later their inevitable progressive deterioration leads to accurate diagnosis.

Diagram 31



Age and sex distribution of anaemias. Patient consulting rates per thousand at risk.

The condition increased markedly with age and there was a definite 2 : 1 predominance in females, which although not so striking as in the iron-deficiency type is still significant, suggesting some female susceptibility to all anaemias.

Age and sex distribution of other anaemias - patient consulting rates per 1,000 at risk

	All ages	0-	5-	15-	45-	65 and over
Males	3.1	5.7	3.1	1.7	3.3	6.3
Females	20.0	4.4	5.4	26.8	21.3	20.9
Persons	12.1	5.0	4.2	14.7	12.9	15.2

Most of these "other anaemias" were probably varieties of the common iron-deficiency anaemias, and it is considered justifiable to group them together.

The striking sex differences were most obvious in young adults and least so in young children.

It is a little surprising to note the rising incidence of these anaemias with age, particularly in men, which raises practical problems of early diagnosis and management. A routine rapid screening test of all susceptibles at all ages would certainly be a useful addition to modern practice technique.

Prevalence of anaemia by type of practice and in each standard region - patient consulting rates per 1,000 at risk

	Urban	Semi-urban	Rural	All practices	Northern	East and West Ridings	North Western	North Midland	Midland	Eastern	London and South Eastern	Southern	South Western	Wales
Pernicious anaemia	2.1	2.1	1.7	2.0	1.9	2.9	3.0	1.7	1.6	1.0	1.2	1.0	1.6	1.4
Other anaemias	12.8	8.8	13.3	12.1	16.1	16.8	13.8	9.3	12.8	6.3	8.2	8.2	10.9	13.3

The incidence of anaemia differed in various parts of the country.

Pernicious anaemia was considerably more frequent in the north than in the south. It would be interesting to carry out more detailed studies on this aspect. The incidence of the other types also appeared very much higher in our northern counties and here again the reasons should be elucidated.

Social and occupational influences

Anaemia in men was very low, as we have seen. The highest rates were found in men in textile occupations, and in those men in Social Class V.

In women, skilled textile workers had the highest rate and shopkeepers the lowest.

CORONARY ARTERY DISEASE

In an average year there are some 75,000 deaths from coronary disease. It is difficult to find out, or to estimate, how many patients with coronary artery disease are referred to hospital each year, but it is quite certain that only a small proportion (according to this Survey 8 per cent) of all the estimated 320,000 cases of coronary artery disease are admitted to hospital by the family doctor in any one year. It is clear, therefore, that, as in other common illnesses, the family doctor is able to obtain a much better total picture than can the hospital consultant, who sees highly selected material.

As with anaemia and hypertension we cannot verify the absolute accuracy of the diagnosis of coronary disease in this series because no set diagnostic standards were imposed. It is safe to assume, however, that the diagnosis was correct in the great proportion of instances. A family doctor is unlikely to diagnose coronary artery disease without either very sound clinical evidence such as angina of effort, or confirmatory E. C. G. abnormalities when the clinical symptoms and signs are more equivocal.

Two groups of conditions were recorded, "heart disease specified as involving the coronary arteries" and "angina pectoris without mention of coronary disease". For practical purposes these could be grouped together.

Age incidence

Age and sex distribution of coronary artery disease - patient consulting rates per 1,000 at risk

	All ages	0-	15-	45-	65 and over
Males	8.8	-	0.9	16.9	37.7
Females	5.8	-	0.2	7.4	25.9
Persons	7.2	-	0.6	11.9	30.6

The prevalence at all ages for both sexes was 7.2. Applying this rate to the general population of Great Britain we find that 360,000 persons with coronary artery disease are under the care of their family doctors each year.

Sex differences

The expected sex differences were brought out by the Survey figures although they were less dramatic than is often stated.

Sex differences of coronary artery disease

	All ages	0-	15-	45-	65 and over
Male/Female	1.5	-	4.5	2.3	1.5

The sex difference decreased with age, and this fits clinical impressions, for over the age of 70 there is quite likely to be very little sex difference at all.

It is of some practical interest to note that whereas in those aged 65 and over the M : F sex ratio for angina was only 1 : 1, that for specified coronary artery disease was nearly 2 : 1. It would appear that women were relatively more liable to suffer from anginal symptoms than to suffer the more specific coronary artery syndromes.

Regional variations

The rate was highest in the urban areas, lowest in rural, with semi-urban areas in between. The patient consulting rates per 1,000 at risk in each standard region were (all regions, 7.2):

Northern	7.4
East and West Ridings	10.1
North Western	7.0
North Midland	5.5
Midland	5.9
Eastern	4.8
London and South Eastern	6.7
Southern	6.2
South Western	7.0
Wales	9.4

The highest rates were in the East and West Ridings and Wales and lowest in the Eastern and Midland Regions. The reasons for this are not at all apparent.

Admissions to hospital

The tables give the proportion of times admission to hospital was arranged for the patients.

This rate for coronary artery disease was only 8 per 100 incidents diagnosed. This is a surprisingly low figure. It may well be that some of those not recorded had been in hospital in a previous year.

Social and occupational influences

The highest rates for coronary artery disease in men (15-64) were noted in administrators, managers, foremen, shopkeepers, commercial travellers and textile workers. The lowest rates occurred in agricultural workers, coal miners, electrical engineers and those connected with water transport.

Social distinctions apparently played a small part in this study, viz:

Patient consulting rates per 1,000 at risk

	All Social Classes	I	II	III	IV	V
Males aged 15-64	6	6	8	6	6	7

OTHER CONDITIONS

Rheumatic fever is now a very rare condition; the prevalence was less than 1 per 1,000 at risk even in children.

The management of heart failure is a weekly, if not a daily, affair for the family doctor. It is really only in the elderly that this problem occurs, and the prevalence rate in those over 65 was approximately 20 per 1,000.

Chilblains appear clinically to be more frequent in young women and this was confirmed in this Survey.

Age and sex distribution of chilblains -
patient consulting rates per 1,000 at risk

	All ages	0-	15-	45-	65 and over
Males	1.5	2.4	1.3	1.1	1.3
Females	5.4	4.3	8.1	3.3	3.5
Persons	3.6	3.3	4.9	2.2	2.6

At the most frequent period, 15-44, the female predominance was sixfold. Varicose veins were nearly three times as prevalent in women as in men.

Age and sex distribution of varicose veins -
patient consulting rates per 1,000 at risk

	All ages	0-	15-	45-	65 and over
Males	6.5	0.0	5.4	11.4	13.4
Females	18.4	0.1	11.8	27.9	31.8
Persons	11.8	0.1	8.7	20.2	24.3

The rate of phlebitis and thrombophlebitis was 1.4 per 1,000 in men and 3.3 per 1,000 in women. For varicose veins the highest rates in men and women were noted in shopkeepers and personal servants who, as we know, spend much time on their feet.

Haemorrhoids, on the other hand, were a little more frequent in men, 8 per 1,000, than the 7 per 1,000 rate in women.

DISCUSSION

The load of cardiovascular disease on the community and hence on the family doctors is such that approximately 80 per 1,000 of all patients were seen in the year for cardiovascular or blood disorders.

Inevitably, a good many of the conditions encountered are degenerative in nature and involve elderly patients more often than any other age group. To help the family doctor to cope efficiently with all these problems provision of diagnostic facilities is necessary. Access to pathological laboratories is needed to make an accurate diagnosis of anaemia. Co-operation is required for treating coronary occlusions with anti-coagulants, and X-rays are often required to assess the progress of certain cardiac lesions.

This single year's records have already shown many facts that are of interest and require further studies, especially relating to the natural history and course of these illnesses and conditions.

DISEASES OF CHILDHOOD

Dr. H. H. A. Elder

Of all the problems which confront the general practitioner the ones which are most likely to arouse a feeling of inadequacy are those which concern young children. The young doctor, and even his more mature colleague, often feel that although they have been instructed and may be experienced in dealing with the major diseases of childhood, much of child care in general practice is concerned with minor conditions that are unclassified and untaught. He may even be at a loss to make up his mind whether he is dealing with a pathological condition at all. At the outset of his career the feeling is that he has not been prepared for the pattern of consultations which unfolds daily before him and his orthodox instruction seems inadequate.

This chapter deals with children under 15. The Survey tables are arranged for the most part in diseases classified under Systems and these diseases are named according to the International Statistical Classification of Diseases, Injuries, and Causes of Death. For the general practitioner this seems to produce information which is confusing or which may appear a little unreal. A clinician regards upper respiratory infection as an extending process from a common cold through the stages of failure to stem the invasion, to a spread to sinuses, eustachian tubes, and middle ears and lower respiratory tract; he is baffled to find otitis media dealt with under "Diseases of the nervous system and sense organs". Tonsillitis is hardly a feature or complication of a respiratory infection but is found under "Diseases of the respiratory system". Of all age groups, children are the least amenable to having their ailments classified under Systems, and it is convenient to deal with them, in part, in a more realistic way.

The Survey figures show that for every 100 children on his list, a doctor will see 74 at least once in a year, a higher rate than at any other age group.

Although the attendance rate of sickness in children is higher than in any other age group the frequency of consultation is less, taken over all diseases. That is, although the practitioner will see each year a higher proportion of his child patients than adults, the illnesses for which they consult will necessitate fewer consultations. The exceptions to this are the infectious diseases and the respiratory diseases.

Age and disease incidence

For some diseases far more children are seen than adults. Children consulting for dysentery, for instance, are nearly four times more than at any other age group; for urticaria, from two and half to seven times more; for acute bronchitis, nearly three times the number seen at 15-44; for pyrexia of unknown origin, nearly eight times the number at 15-44.

Some diseases common in adults are never seen in children, or only very rarely. Pernicious anaemia, thyrotoxicosis, and gastric ulcer are examples. Seven cases of duodenal ulcer and twenty-one of diabetes were reported. No gonorrhoea was seen and only eight cases of syphilis.

Sex incidence

Sex difference in incidence shows in only a few conditions. Hay fever and asthma have a higher incidence in boys and "urticaria" in girls. Obesity is

reported more often in girls than in boys but at nothing like the increased incidence at 15-64. It may be that in this condition aesthetic reasons come into operation in the older age groups. It is only in the higher age groups that iron-deficiency anaemia has its higher incidence in women. Why is stye reported more frequently in the female at all age groups? The figures bear out the greater incidence of chilblains in the female at all ages. Infections of the skin and cellular tissues are commoner at all ages in the male. The conditions which show the greatest variation in sex incidence are the urinary infections.

When the specific conditions for which children consult are set out in order of relative frequency it is found that the five leading conditions are acute upper respiratory infection, accidents, non-sickness, tonsillitis and otitis media.

Acute upper respiratory infection

In view of the present interest in the problem of the "catarrhal child", as presented notably in the work of Fry*, it was felt that this Survey should be able to confirm or refute the conception that the incidence of upper respiratory infection in children shows an increase at about the age of school entry and then gradually falls towards the age of 8 or 9. As the available tables do not illustrate this, a further analysis of the figures was carried out by the General Register Office. This analysis was applied to the records of nine practices representing urban, semi-urban and rural areas in the three main regions. The total child population in this group was about 10,000. Diagnoses which could be included in the group "Upper respiratory infection" were found to be very varied. The common cold is labelled by different doctors as coryza, nasal catarrh, febrile catarrh, cold, or nasopharyngitis. Different labels can mean the same thing and a multiplicity of labels only obscure and confuse the picture. These conditions are listed in the table below. Grouped together they show clear evidence of a marked fall from 5 to 9 years of age. The figures are not sufficiently detailed to show accurate position and the peak for 0-4 may well occur at the age of 4. With 997 cases in the group 0-4, on an arithmetical mean, this is approximately 200 cases for each year of this age group. Assuming, as most practitioners would allow, a gradual build-up from birth, age 4 must have more than 200 cases as compared with 186 at 5.

Age distribution of children consulting for acute upper respiratory infections in nine selected practices

	0-4	5	6	7	8	9-14
Coryza	405	59	49	38	32	124
Nasal catarrh	53	11	22	15	6	37
Respiratory catarrh	208	47	39	44	33	108
Febrile catarrh	44	8	3	4	2	8
Nasopharyngitis	15	3	3	0	1	11
Colds	9	3	0	1	3	13
Pharyngitis	82	30	24	20	27	134
Acute pharyngitis	74	10	27	24	19	119
Laryngitis	17	0	3	0	3	5
Acute laryngitis	12	2	1	1	1	7
Tracheitis	6	0	3	2	2	8
Acute laryngotracheitis	7	3	5	0	3	3
Croup	13	0	0	0	2	0
Upper respiratory infection	52	10	6	6	5	32
Total	997	186	185	155	139	609

*FRY, John. The catarrhal child. Butterworth, London. 1961.

One of the commonest situations with which the practitioner is faced is the anxious mother with a "catarrhal" 4-6 year old. Her story is that the child gets one cold after another and is more often absent from school than he is present. She has taken every precaution she can think of. She fusses over draughts, diet, and clothing. She discusses her child's ailments with all and sundry and becomes very worried. The explanation of the situation seems to be that the sheltered pre-school child widening his environment and activities on entry to school, at 4 plus or 5, comes into direct contact with many other children and is exposed to constant sources of infection. As he has not built up an immunity he repeatedly succumbs to these. This immunity gradually develops until by the age of 8 or 9 he rarely suffers from a cold, and if he does, he recovers quickly. The tasks of the family doctor must be to prevent the secondary infections such as purulent nasal discharge, sinusitis, bronchitis, and otitis media.

The same pattern emerges when tonsillitis is considered, the incidence declining steadily from 5 to 9 years of age.

Otitis media

The figure of 63 per 1,000 at risk is a very high one for an individual disease. It is certain that only a tiny fraction of these reach the consultant and it is quite likely that many newly qualified doctors leave hospital without ever seeing a small child with an inflamed drum. Yet in practice it is one of the commonest conditions to have to deal with. It is also one of the commonest causes of pyrexia of unknown origin in the infant.

It is interesting to note that mastoiditis is not listed separately in the main Survey tables. This must mean that the number of cases recorded was very small. Most practitioners would say that they have not seen more than two or three cases, if as many, in the past ten years.

Accidents

There is not much to be learned from the study of the various types of accidents, but there is some interest in the varying incidence according to age. The incidence of fractures remains at about the same level up to 45 and then rises with age. All other accidents decrease with age except for contusions which remain practically constant, and sprains and strains which rise to a peak at the games-and-physical-activity group of 15-44. The fact that, except for sprains and strains, all types of accident are seen more frequently affecting children than any other age, should not be the basis for theorising. Children are often brought to the doctor for the most trivial mishaps that would certainly not lead an adult to seek medical help.

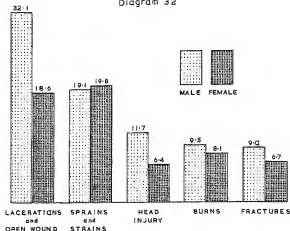
The remaining member of the top five will be discussed later - non-sickness, which includes immunisation.

THE CHANGING PATTERN

The Survey confirms very clearly in figures the impressions formed in many years of practice of the changing pattern of the incidence and virulence of disease. This is, of course, most obvious in the infectious and infective diseases.

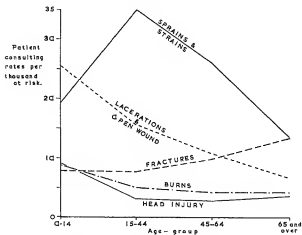
No case of diphtheria was recorded. This is vastly different from the days when every sore throat had to be swabbed in order to exclude diphtheria. A great load of anxiety has been removed from the practitioner. These extremely satisfactory results of a generation of propaganda for immunisation for diphtheria should stimulate further endeavours in other directions.

Diagram 32



Accidents among children by sex.
Patient consulting rates per thousand at risk.

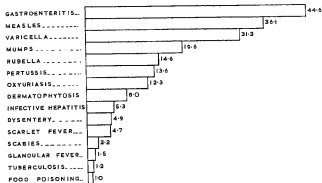
Diagram 33



Age distribution of accidents.
Patient consulting rates per thousand at risk.

Fifty years ago the death rate in infants from diarrhoea and vomiting was appalling. The reduction in this must be ascribed to improved hygiene in a very broad sense, from the macadamising of roads to the pasteurising of milk. There are, however, some disquieting figures which indicate the need for avoiding complacency in this matter. The tables list as two separate diseases "dysentery" and "gastro-enteritis". The former is listed under "Infectious diseases" and the latter under "Diseases of the digestive system". But in the great majority of instances diarrhoea and vomiting is an infection, if it is taken to mean an acute illness either self-limiting or readily amenable to therapy. Presumably the explanation of this separate treatment is that cases with laboratory evidence of infection or perhaps showing blood and mucus in the stools were recorded as "dysentery" and the others as "gastro-enteritis". It would seem reasonable to group these together. Also in this category, but listed separately in Volume I, are "vomiting and diarrhoea" (Table 9, Section 16) and "food poisoning" (Table 9, Section 1). When these are totalled the patient consulting rate rises to 53 per 1,000 at risk. This means that the commonest infectious disease is alimentary infection.

Diagram 34



Infectious diseases among children.
Patient consulting rates per thousand at risk.

This is indeed a change in comparative incidence rates, and one which demands the attention of epidemiologists, pathologists, public health authorities and, in close co-operation with these, general practitioners.

It is well recognised that in only a small proportion of obviously infective diarrhoeas is the pathologist able to isolate a causal organism. There seems little hope of advance along the line of laboratory investigation and it would seem that the rational field to cultivate is that of public and personal hygiene. It should hardly be necessary to call attention to conditions of hygiene in food shops and stalls; in the transporting of meat, bread, fish and fruit; in public conveniences in restaurants, bars, and licensed premises; in cooking inside and outside the home.

The next most common infectious disease is measles. The contemporary impression is that the virulence of measles has decreased of recent years. The consultation rates show the average case to require the doctor's visit on three occasions. Bearing in mind that measles often requires several visits before the rash appears and the diagnosis is established, it seems that the illness is demanding much less attention.

The older practitioners will be well aware of the fall in the number of cases of whooping cough diagnosed and of the mild nature of the disease as now seen. This fall, however, does not represent correctly the fall in incidence. The disease is very much milder than formerly, and the practitioner is often in great doubt as to whether a case is one of pertussis or not. The presence or absence of a whoop is no longer a reliable criterion for the diagnosis. Many cases are so mild that no whoop occurs, and the diagnosis rests on an estimate of the character of the cough. It must be the case that practitioners when in doubt do not notify. Thus there will be many more cases than are notified. The same will hold in regard to the recordings in the Survey. Immunisation must be given some of the credit for this.

It is noted that the figures show the average number of consultations in a case of whooping cough to be four. This is certainly a great deal less than would be so twenty-five years ago when the disease dragged on leaving an aftermath of chronic cough, bronchopneumonia, segmental collapse, and bronchiectasis.

Of 413 cases of scarlet fever at all ages only 21 were admitted to hospital (Tables 9 and 15 of volume I). Scarlet fever is now commonly admitted to hospital only for socio-medical reasons. In the past it was the rule for the disease to be treated in hospital. This change must be due in part to the altered conception of the disease and in part to the decrease in virulence. The figures show that the condition is now almost entirely treated at home and with an average of less than four attendances. The usual practice is probably to treat with sulphonamide or antibiotic in the early stages, and then to allow the child to get up and to watch for complications in the third and fourth weeks.

Only 69 cases of rheumatic fever were recorded in childhood (0.8 per 1,000 at risk). This is support for the belief that the disease is now much less common than heretofore.

The reduction of venereal disease almost to vanishing point is a tribute to the efficiency of the antibiotics, and the venereologists.

It must be remembered that although modern medicine has caused certain diseases to diminish in incidence and virulence it has also introduced other troubles in their place. One recognises iatrogenic disease in retrolental fibroplasia but it might be well to consider how many cases of drug sensitivity are covered by the label "urticaria". On the other hand, that iatrogenic disease is not a modern invention is shown by the complete disappearance of "marasmus" which was a condition due to the persistent underfeeding of infants who were thought to be unable to digest one or other of the components of milk.

Pertussis is followed in order of prevalence by "threadworms" with an incidence of 12.3 per 1,000. It is generally accepted now that infestation with threadworms is harmless except for some pruritus, and the occasional blocking of the appendix with massive infestation. The condition is a social stigma rather than a pathological state. Few would now support the view that threadworms are the cause of any of the symptoms ascribed to them. The condition is common but it does not clear up without careful instruction on the part of the practitioner and scrupulous attention to detail on the part of the parent.

Only two other points are of interest in considering infectious disease, concerning scabies and tuberculosis. In the former the lesson is that scabies still exists in peace-time and in the Welfare State. In regard to tuberculosis, the interest is really centred on the lowly position that it occupies in the prevalence rates. In children one would not expect to see any considerable figure for respiratory tuberculosis and therefore a sample analysis was done as described above to find out what conditions were included in "Tuberculosis, other forms". These were: "Mantoux-positive calcified mesenteric glands", "Tuberculous mediastinal glands", "Tuberculous cervical glands," and "Tuberculous hip". There were four cases from a population of approximately 10,000 children. It is interesting that none of these arose in an urban area, where milk is almost always pasteurised.

Allergic diseases

Seventh in the order of total prevalence is "urticaria". This can be a refuge diagnosis in cases of doubtful skin eruption and is probably not a very reliable label. Children are notorious for producing rashes and eruptions for which no cause can be found and these are often labelled "urticaria" when they almost certainly are not. It would be very unwise to draw any conclusions from the figures for urticaria in this age group, but the high figure does indicate the extreme frequency with which doctors are consulted for a child's rash.

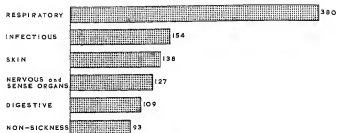
In the case of asthma a more selective diagnosis is desirable. A useful, if not ideal, classification is the time-honoured "Allergic asthma" and "Asthmatic bronchitis". Possibly a third group of "Mixed type asthma" would be useful. This would clarify the situation considerably and would also be more useful in investigating the future condition of child asthmatics. It would be dangerous to build any theory on the broad label of "Asthma" at 0-14, although its prevalence among boys is nearly twice that among girls. No doubt many speculations could be made on this fact. It is not always easy to know how to record a child with a wheezy cough. The same child with bronchospasm at one time could be recorded as "asthma", and at another without bronchospasm as "bronchitis."

Diseases of the skin and cellular tissue

When one looks at the relative incidence of disease grouped by "systems" instead of by individual diseases it may cause some surprise to find that taking third place after "Respiratory" and "Infectious disease" is "Disease of the skin and cellular tissue" (Diagram 35). These occupy this position because of the high incidence of septic conditions - a further reminder of the great vulnerability of the child to infection. Impetigo and boils together nearly outnumber all the other skin conditions put together (Diagram 36). Of the skin diseases proper the commonest are recorded as eczema and dermatitis. The figures confirm that the skin conditions the practitioner sees most frequently in children are impetigo, warts and verrucae. The advent of the antibiotics has solved the problem of the quick treatment of impetigo.

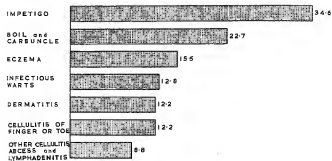
It may, however, have altered the character of the condition for it is unusual now to see crusting scabbing lesions once so typical. The problem of warts and verrucae is considerable. Many areas have been compelled to open wart clinics to deal with the numbers of children requiring treatment. The difficulty with plantar warts is to find an effective treatment which will allow the child to remain ambulant. Surgery and freezing produce a lesion which takes some days to heal and it may be painful. Painting with softening agents is very slow and in the end may prove ineffectual. Chiropody, if expert, is painless, effective, and the child can remain ambulant. Local authorities may now set up their own chiropody service and it is to be hoped that as this develops patients may see a chiropodist much earlier than has been the case in the past.

Diagram 35



Diseases among children by "systems".
 Patient consulting rates per thousand at risk.

Diagram 36



Diseases of skin and cellular tissue among children.
 Patient consulting rates per thousand at risk.

Passing to eczema and dermatitis, these terms are not likely to find favour with a dermatologist and in themselves mean little. There is little to be gained by discussing them. As they cause only an average of two consultations presumably they refer to conditions which yield readily to treatment.

Mental, psychological and personality disorders

As one does not readily conceive of small children suffering from psychological disorders as normally understood it was felt that it would be of interest to find out what conditions comprise this group. The detailed separate diagnoses were therefore obtained from the recordings of the nine practices used in the analyses described above. This represented a child population of about 10,000. The following data emerged and are set out in groups:

Anxiety	1
Anxiety state	6
Mild anxiety state	3
Anxiety hysteria	1
Anxiety neurosis	2

Of these only one was under 8 years of age (5).

Hysteria	3
Hysterical anorexia	2

Of these all were aged 8-14 except one under 4.

Nervous gastritis	1
Nervous vomiting	2
Psychogenic vomiting	2
Nausea	2

Four of these were under 4.

Nervous debility	3
Nervous strain	1
Nervous tension	2
Nervous upset	3
Psychogenic fatigue	1

All were in the age group 7-14 except for one aged 5.

Emotional instability	3
All at school age.	

Behaviour problem	7
Behaviour difficulty	5
Behaviour upset	1
Two were 7-14 and 11 were 0-5.	

Delinquency	2 at 9-14
Insecure child	1 at 8
Night terrors	8 at 0-4, 3 at 5-6
Nervous enuresis	4
Diarrhoea and colic enuresis	1

The multiplicity of labels is striking. Whatever the condition which gave rise to the diagnosis, each case was an abnormality of behaviour or function and could usefully be labelled "Behaviour problem" or "Behaviour abnormality". This implies clearly that the child is in difficulties in his environment and the actual manifestation becomes of little importance. It is the environmental conditions that require investigation. These conditions had a patient consulting rate of 7 per 1,000.

A practitioner who has had some training and experience in the field of paediatrics or psychiatry will be at a great advantage in this situation and will save everyone time and trouble by selecting his cases for special advice more accurately.

Pyrexia of unknown origin

It is interesting to note the high incidence of undiagnosed pyrexia which is eight times that of any other age group. This is another illustration of the difficulty of paediatrics.

Congenital abnormalities

As it was felt that it would be interesting to know what congenital abnormalities had been recorded, recourse was again taken to the nine practices already used. In this child population of 10,000 the following were recorded:

Microcephalic imbecile	1
Spina bifida	1
Accessory auricle	1
Tetralogy of Fallot	1
Auricular septal defect	1
Congenital pulmonary stenosis	1
Cleft palate and harelip	3
Tongue-tie	4
Hirschsprung's disease	1
Undescended testicle	8
Congenital deformity ear	1
Hypospadias	2
Bilateral dislocation of hip	1
Congenital deformity digit	1
Congenital deformity, flexion	1
" " toe	1
" " chest	1
" " ankle	1
Laryngismus	2
Congenital ichthyosis	1
Thyroglossal cyst	1

Figures for such a group as congenital abnormalities for one year are of little value as many cases will exist which the practitioner does not see in that year and many might attend with other conditions which had no relation to the abnormality and the latter not come to light. There is no way of knowing how many cases of a particular abnormality exist at any one time. One can, however, make an estimate in such a condition as harelip and cleft palate. In the population of 10,000, 3 cases were recorded. The number of births in England and Wales is approximately 700,000 per annum. On this basis one gets a figure of 210 cases born each year. It is worth considering whether some method of notification of congenital abnormality could be instituted. An experiment in this is at present being conducted by the Research Committee of the College of General Practitioners.

ADMISSIONS TO HOSPITAL

The interesting fact in this table (15 of volume I) is that the condition most frequently admitted to hospital at all ages is hypertrophy of tonsils and adenoids. The actual number was 1,026 or 629 per 10,000 admissions. The

validity of the figure is undoubtedly questionable but it is certainly an understatement as many cases would be admitted without the recording doctor's knowledge. This is an enormous figure for a condition in which in many cases the advisability of operation is debatable.

CONSULTATION RATES

How much work do these illnesses cause the practitioner? This is reflected in the figures for consultation rates, that is, the average number of times patients are seen for the particular illness in relation to the number of patients at risk. The following table is compiled to show the rates at all ages. The figures are rates per 1,000 population. The infectious diseases and hypertrophy of tonsils and adenoids are omitted as the differences according to age are so obvious.

Disease or Condition	0-14	15-44	45-64	65 and over
Acute nasopharyngitis	295	131	127	112
Non-sickness (persons)	224	365	17	14
Non-sickness (males)	227	34	16	15
Acute tonsillitis	217	88	26	8
Accidents	216	254	258	237
Otitis media	184	30	19	15
Gastro-enteritis	88	33	37	45
Acute bronchitis	75	25	69	125
Impetigo	60	11	4	2
Urticaria	52	18	14	9
Boils and carbuncles	41	66	49	24
Asthma	41	39	74	69
Pyrexia of unknown origin	40	5	4	3
Eczema	33	26	42	44
Conjunctivitis	29	19	25	24
Infectious warts	25	10	5	3
Abdominal pain	24	16	13	15
Cellulitis of finger and toe	23	33	24	16
Dermatitis	21	31	39	28

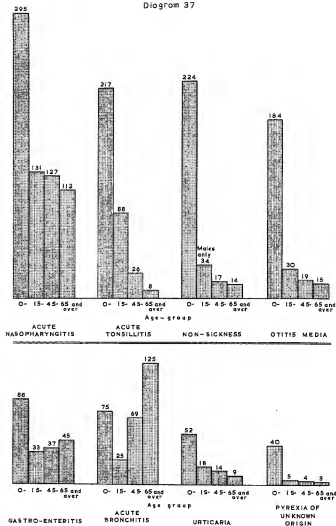
Non-sickness is shown in the male in order to correct the inflated figure at 15-44 caused by maternity cases.

The striking features are the rates for the common cold, non-sickness, tonsillitis and otitis media. These are well known to involve the doctor in more work where children are concerned. A lesser variation is shown in gastro-enteritis, acute bronchitis, impetigo, urticaria and pyrexia of unknown origin.

DISCUSSION

A practitioner in providing a complete service becomes concerned with children before they are born. Ideally he advises the expectant mother on preparation for the infant's feeding, and educates her in a proper attitude to its management. He will advise her on every problem which will arise in her daily routine. He will have to do this personally by word of mouth with the less intelligent, and to be familiar with current literature in order to advise the intelligent mother on her reading. He will have to be able to recognise behaviour problems as such and to advise on their management. He will have to be familiar with the normal development of the child in order to be able to differentiate the physiological from the pathological. He will be expected to

Diagram 37



Age distribution of consultations for certain diseases and conditions. Rates per thousand at risk.

advise and carry out a properly planned immunisation programme. A very large proportion of his work will not be concerned with illness at all. He will have to accept these duties and will have had to equip himself to carry them out properly. At no other age group are such demands made upon the practitioner.

Much of the skill that a practitioner accumulates comes with experience and this is often gained in his own family circle. It is won slowly and hardily, and sometimes it is never acquired. Unless he has had the benefit of special training in paediatrics he has to be dependent on learning as he goes. The present day importance of the general practitioner is steadily veering to the field of prophylaxis. The treatment of major illness is moving beyond his scope and is being taken out of his hands. Its place is being taken by the prevention of major illness. Preventive medicine is too often regarded as being limited to immunisation and chest radiography. The fulfilment of his proper duties will influence the occurrence of accidents through education in home safety, of infections by education in hygiene, personal and otherwise, in psychoneurosis and maladjustments by education of the young parents.

The conquest of diphtheria shows the brilliant results which can be obtained by careful and persistent propaganda. It would be interesting to see graphs showing the decrease in the numbers of diphtheria immunisations done, in relation to the decrease in expenditure on the propaganda for this. It is clear that the kind of vigorous propaganda which brought the victory over diphtheria should now be applied continuously in other directions. The very basis of the health of a nation is the education of the young parents. There has been a great advance in this of recent years. We may well be chastened by considering how much of this has been effected by the popular magazines and periodicals which publish a constant stream of almost universally excellent articles for the young parents on subjects dealing with the physical and developmental problems of childhood. If we compare this lay pressure with the official neglect of the propaganda value of radio and television we may well be self-critical. The stream of inane and often harmful advertising goes quite unleavened by authoritative propaganda in health and hygiene. A powerful national effort is required.

In dealing with infectious disease the health of the public is to a large extent in the hands of the general practitioner. The Public Health Service can be seriously embarrassed by the failure of practitioners to co-operate, and much frustration and misunderstanding can arise from poor liaison between the two. It is sometimes suggested that general practitioners should conduct the public health clinics or organise their own clinics. It is true that there is nothing a public health clinic can do that a competent general practitioner cannot do equally well. The time seems to have come when consideration should be given to the questions of whether the public health clinic has served its purpose, and its functions be distributed elsewhere.

Finally, the general practitioner in this country is ideally placed to press home the education young parents require. But to set out to become an expert on the normal child is a considerable undertaking and few newly qualified doctors can claim this qualification. Practitioners require help to enable them to equip themselves for this task. They need, first, time to learn, and second, time to teach. Their lives should be so adjustable that they can have time to leave their practices to get the necessary training, and their conditions of work should be such that they can usefully apply their knowledge without doing so at the expense of their other commitments. The practitioner at the present stage of development of the Social Services is in great need of help and encouragement. It is too much to hope that more than a proportion of practitioners would be qualified in this way, and it is also unfair that those who do ensure that they are so qualified should go completely unrewarded. After all, there is a list of practitioners qualified to undertake midwifery. Why not a list of general practitioner-paediatricians?

DISEASES OF THE AGED

Dr. R. A. Murray Scott

Definition

For the purpose of this chapter those persons of 65 years or more will be called "aged". This is the oldest of the 4 age groups in this study and so the only one with the right to this name. A number of prematurely aged folk will be included in the 45-64 years age group and there may be some in the 15-44 years group, while some in the aged group may still be "young".

Little is known of the health of the aged and no one would be bold enough to define a "normal" man or woman of 65 years. When the data are available from the Retirement study recently undertaken by the General Register Office and the College of General Practitioners, the health of men at the age of retirement and their fitness to carry on their jobs or to undertake lighter ones can be discussed.

Introduction

The purpose of this chapter is to consider what diseases affect the aged more often or less often than those of younger age groups, how great are the sex differences, and what influence occupation and geography have on the incidence of disease. Arising from this are the relations of the aged with the family doctor, particularly with regard to the attendance or consulting rate for the various reasons enumerated in the study.

Multiple diagnoses

It will be realised that multiple diagnoses are commoner in the aged than in younger patients. For example, an elderly woman with a fractured thigh is likely to contract bronchitis, in which case both diagnoses would be entered on this record. On the other hand a man with considerable limitation of movement from arthritis may be able to visit his doctor for an attack of shingles, in which case the arthritis may not be recorded, as it was not the condition for which the patient consulted the doctor. Thus Volume I of the Report* correctly gives an estimated total annual prevalence of 2,900,000 patients under medical practitioner care for "arthritis and rheumatism" during the course of a year. Such a man would not be under medical practitioner care for his arthritis, and so the total number of patients who have "arthritis and rheumatism" will thus be greater than this figure and the aged group will supply most of the extra number.

Ageing

It will add greatly to the interest of this chapter if the reader first considers what he himself means by the words "ageing" and "aged" and then reflects upon the facts and figures of the study. Probably he would agree that a loss of elasticity, giving rise to loss of function, is the predominant feature of ageing in man, as it often is in material things; for example, in wood or rubber. In man,

*LOGAN, W. P. D. and CUSHION, A. A. Studies on Medical and Population Subjects, No. 14 - Morbidity Statistics from General Practice: Volume I (General). H. M. S. O. London, 1958. p. 38.

however, the loss of elasticity may be of body or of mind. Presbyopia, otosclerosis, diminution in range of movement of joints, atheromatous changes in arteries, increasing slowness in accepting new facts, loss of ability to adjust oneself to environmental changes - all these are examples of loss of elasticity and may be said to denote ageing. One would, therefore, expect to find in the aged an increased consultation rate for those conditions associated with loss of elasticity. On the other hand, there are conditions, noted frequently in younger age groups, where the normal reactions to stimulation are exaggerated. It will be interesting to see if these diminish with age; if the attendance by the doctor on patients with such conditions as eczema, asthma and chilblains is less in the aged than in the younger groups.

Degeneration with loss of function can take place in the important bodily systems such as the cardiovascular and respiratory, upon which life immediately depends; or it may be more obvious in the lens, ear-drum or skin. "Age" may show in one part of the body at a time or several at once. It may be primary, a wearing out process without any visible specific cause, or it may be secondary to hypertension or disease of the prostate or coronary arteries or any of a multitude of conditions which themselves are not looked upon as samples of degeneration, but produce degenerative changes in the vital organs of the body. As the 14 categories of disease are reviewed seriatim, it will be instructive to note which diseases are "primary" in the aged, and which appear to be secondary to a condition demanding attention from the doctor in earlier life. No doubt, too, many doctors will see if their own ideas of incidence of this disease or that are supported or contradicted by this Survey.

Incidence

In the aged group there is a 50 per cent increase in the rate of consultations over those in the middle-aged group and a 100 per cent increase over the 2 younger groups. Attention was only greater among small children under 5 years than among the aged. On the other hand the "patient consulting rate" was fairly even through the 4 age groups, being greatest in the first age group. This shows that the treatment for the diseases recorded took more consultations in the aged than in the younger patients. Old women required 10 per cent more attention than old men, and 6 per cent more old women than old men consulted doctors.

Nearly half of the total consultations for the aged in all the categories reviewed occur in 2 of them: diseases of the circulatory and respiratory systems. The other half of the total consultations are in 2 groups. Four conditions of near equal consultation rate comprise the larger part of it. In descending numerical order these are: diseases of the central nervous system; diseases of bones, joints and muscles; "symptoms, senility and ill-defined conditions", and diseases of the digestive system. The remaining fifth of the total comprises seven conditions, again curiously of almost equal consultation rate, leaving a tiny fraction for the last two categories, infective and parasitic diseases and "non-sickness".

When these conditions of the aged are thus placed in order of frequency of attention by the doctor in this particular year, it will be found, on reference to Table 9, Volume I, of this Study, that each of the first 7 of the 14 categories shows a greater number of consultations in the aged than in the other age groups, that 3 of the next 5 show a fairly even consultation rate through the years, and the last 2 categories have a much smaller rate in the aged.

The order of incidence of diseases in the aged (patient consulting rate) is very similar to their consultation rate. The places of the first 2 (circulatory and respiratory diseases) are changed, but the next 4 places are the same in each.

<u>Consultation rate</u>	<u>Patient consulting rate</u>
1. Circulatory diseases	Respiratory diseases
2. Respiratory diseases	Circulatory diseases
3. C.N.S. diseases	C.N.S. diseases
4. Bones, joints, etc.	Bones, joints, etc.
5. Senility, etc.	Senility, etc.
6. Digestive disorders	Digestive disorders
7. Allergic, etc.	Skin, etc.

If these lists are compared with the lists for all ages, the first 7 groups present a different picture:

<u>Consultation rate</u>	<u>Patient consulting rate</u>
1. Respiratory diseases	Respiratory diseases
2. Circulatory diseases	C.N.S. diseases
3. C.N.S. diseases	Digestive disorders
4. Digestive disorders	Skin, etc.
5. Skin, etc.	Accident, etc.
6. Bones, joints, etc.	Senility, etc.
7. Accident, etc.	Bones, joints, etc.

If similar lists were prepared for the middle-aged (45-64 years) for comparison with the aged, an order of frequency similar to the all ages list would be found, the main difference being that the diseases of bones, joints, etc., at middle age rise to second place and circulatory diseases creep up to fifth place in incidence.

Although respiratory diseases come first in both lists, circulatory diseases for all ages are second in consultation rate, but do not appear at all in the first 7 conditions in order of incidence. They are, in fact, eighth. In other words, the general occurrence of cardiovascular disease is far less in the younger members of the population than in the aged, but the number of consultations per illness is very high. Skin diseases and accidents (fourth and fifth in order of incidence) figure more prominently in the younger age groups than in the aged.

In the other chapters in this book the disease categories and their components have been arranged largely according to the patient consulting rate which is a good index of incidence of disease. In this chapter, however, they have been arranged according to consultation rates. It has already been noted above that in the disease categories the two rates are very similar. In the discussion of the components of these categories both rates are examined wherever possible.

There now follows in order of consultation rate a brief factual description of each disease group as it affects the aged, illustrated where necessary by a histogram to show their distribution and the amount of attention given by the family doctor to the various disorders.

Finally comes a discussion of some of the main results expressed from the figures of the report with opinions and suggestions, for which the writer alone is responsible.

Diseases of the circulatory system

More than a fifth of all people over 65 consulted their doctors for diseases of the circulatory system, there being 5 women for every 4 men affected.

If the incidence of these conditions in the aged is compared with their incidence in the younger groups, an immediate separation into two categories is effected. Some of the conditions occur almost entirely in the aged group, being found infrequently before 65 years of age. These include myocardial degeneration, arteriosclerosis, congestive heart failure, functional disease of the heart, and left ventricular failure. They are, by and large, results of degeneration, wearing out processes. The second category comprises conditions which, though common in the aged, are also fairly well represented in the next younger age group (45-64 years). These are coronary disease with angina pectoris and hypertension with hypertensive heart disease, and many cases are the result of ageing, superimposed on disease of middle age.

The Survey shows that hypertension and hypertensive heart disease are far the most frequent reasons for consultation in diseases of the circulatory system. It is a striking fact that in the 45-64 age group the consultation rate for hypertensive heart diseases was twice as great for men as women, though the patient consulting rate was almost the same in both sexes. On the other hand in the aged group the roles were reversed, for 3 women suffered for every 2 men and the consultation rates were in the same proportion. This suggests that at middle age hypertensive heart disease is more severe in men than in women. The men certainly secured more than twice as much attention. "Hypertensive disease without mention of the heart" was more than twice as common in the aged as in the next age group (45-64 years), and in each age group rather more than twice as many women as men were affected.

The second big group of circulatory diseases in the aged is labelled "myocardial degeneration" and had an equal sex incidence. This group cannot have a clear clinical demarcation and probably contained cases which might equally well have come under some of the other headings. Following closely in order of incidence came cases of coronary disease to which may be added those of angina pectoris. In the aged, 40 per cent more males than females were affected, but in the middle-aged the male patient consulting rate was more than twice that of women and the consultation rate three times as great.

General arteriosclerosis with almost equal sex incidence came next, followed by congestive cardiac failure with male preponderance. Functional disease of the heart affected rather more women than men. Left ventricular failure had a comparatively small incidence. Chronic rheumatic heart disease was of interest in being one of the two diseases of the circulation which had a higher incidence in the middle-aged than in the aged; the other was haemorrhoids.

Varicose veins of the legs was far the commonest disease of the blood vessels and was between two and three times as frequent in women as in men in the three oldest age groups. The consultation rate in the 15-44 group was about 20 per 1,000 patients, in the 45-64 group nearly 70, and in the aged over 100. Phlebitis and thrombophlebitis got about a quarter of this attention in each of these 3 age groups. Haemorrhoids in the aged group occurred more commonly in men (3 men to 2 women) and were noted as frequently as in the 15-44 year group. The greatest incidence was in the 45-64 year group. These figures suggest either that thrombosis or operation during middle life cured some of the patients, or that the elderly more readily put up with the discomfort of the condition.

The diseases associated with the heart and arteries showed an average of about 10 consultations per patient sufferer, while the average for diseases associated with veins was between 3 and 4.

Diseases of the respiratory system

In the aged the consultation rate for respiratory diseases was 30 per cent less than for circulatory diseases, but the incidence, judged by the rate of patients consulting the doctor, was 14 per cent more. In other words, fewer consultations were required for each illness than in the circulatory diseases. In respiratory conditions the consultation rate for old men was 50 per cent more than that for old women. The number of male patients was, however, only 15 per cent greater, a fact which suggests that the old men took longer to recover. This increased incidence in old men counterbalances the excess of old women over men in the circulatory diseases, thus levelling the sex incidence in the two largest categories of disease in the aged.

As can be seen from the Survey figures, bronchitis was far the commonest respiratory disease of the aged to demand the family doctor's attention. They also clearly show that men were more often affected than women in the ratio of 8 to 5. These figures cover bronchitis in both its acute and chronic forms, and a separation into its component parts shows a striking difference in sex incidence, for in the acute cases, which constituted about one-sixth part of the total, the sex incidence was almost equal, actually with a slightly greater female incidence. Thus the proportion of men to women in the chronic cases is increased to approximately a 2 to 1 ratio.

Bronchitis was well represented in all the age groups. The sex incidence in the first two age groups was almost equal and only in the third and fourth was the male preponderance obvious.

The Survey shows that, lagging far behind bronchitis, each with a consultation rate of about one-sixth of that disease, came three conditions which demanded an almost equal number of consultations among the aged. These were common cold, influenza and pneumonia. However, when the patient consulting rates are examined it is found that the incidence of the common cold was over four times that of pneumonia and nearly twice that of influenza. Stated in different terms, this means that on the average the doctor saw the sufferer from the common cold twice, the patient with influenza four times and the pneumonia case eight times. Men were affected slightly more than women in each of the three conditions.

The common cold affected youth most and created less and less havoc through the age groups. Influenza was most noticeable in the middle-aged group, falling by 35 per cent in the aged. Pneumonia, after its incursion into the youngest group, fell back smartly in the young adult group and then made itself frequently felt among the older patients, the aged being attacked twice as often as the middle aged.

The remaining conditions in this group appear less frequently. The first two are labelled "acute upper respiratory infections of multiple or unspecified sites" and "acute pharyngitis". It is tempting to add these to the "common cold" block, but a female preponderance in each, of some 30 per cent, induces hesitation as the common cold had a male preponderance in the aged. On the other hand, as in the common cold, the cases of "acute pharyngitis" are numerically greatest in youth, least in age, though those of "upper respiratory infection", again most frequent in youth, have a constant small incidence in the remaining three age groups.

Pleurisy came next and had an incidence so small that there was only one for every 50 cases of bronchitis. Even so, there were enough to show that two old men were affected for every one old woman. Chronic pharyngitis and chronic sinusitis end the list with equal sex incidence, both conditions being common in early life, but tending to disappear with age.

New growths of the respiratory system also occupied little of the family doctor's time. Old men were affected with "cancer of lung, bronchus or trachea" about twelve times as often as old women, the middle-aged suffering almost as often as the aged. Further information is noted later under the section entitled "New growths."

Diseases of the nervous system and sense organs

This is the first of the group of four conditions of the aged each claiming a consultation rate of about 600 per 1,000 of the population (circulatory diseases 1,680 per 1,000). The general incidence is the same for both sexes. The patient consulting rate is about 150, which means that on the average the doctor saw each patient four times. This is exactly half the average figure of 8 attendances per patient consulting for circulatory disorders (the highest figure in the survey of the aged).

As will be seen later, this is not really a helpful deduction. One might well expect that "vascular lesions affecting the central nervous system" in the aged would claim a considerable amount of the family doctor's attention, but it may occasion some surprise to find that such lesions were responsible for well over half the consultations with regard to the central nervous system alone; that is, omitting diseases of sense organs. The average number of consultations per patient was as high as for circulatory diseases elsewhere (8 per patient) so that consultations for the rest of the diseases under this heading were obviously very few, averaging 2 per patient. These vascular lesions of the central nervous system are diseases of the aged, though a few occur in the middle-aged group, and both sexes are equally affected.

The next disease in order of incidence was paralysis agitans (consultation rate 39 per 1,000), a long way behind the vascular lesions (233 per 1,000). It was five times as common as in middle age and men suffered rather oftener than women. A mixed bag of "other cerebral paralysis" had a consultation rate of 51 per 1,000 and a slight female preponderance. Multiple sclerosis was less frequent in the aged than in the younger patients. The consultation rates in young adult, middle and old age were respectively 8, 15, 3 per 1,000 with a heavy weighting towards females, especially in middle age, where it was 2 to 1 male. Consultations for epilepsy were greatest in young adult life, slowly decreasing with age. The sex incidence was equal till after 65 when there appeared an interesting large increase in the proportion of men to women (about 7 to 4).

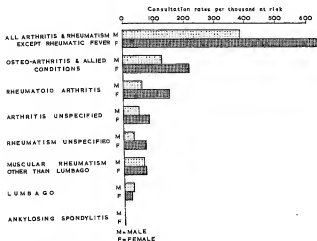
Sciatica had a consultation rate of 20 in both middle and old age though displacement of intervertebral disc, recorded later under diseases of bones and organs of movement, shows rates of 30 for middle age and only 9 for old age. Facial paralysis and trigeminal neuralgia, brachial neuritis and other unspecified forms of neuralgia and neuritis were small groups heavily weighted towards the female in a ratio of almost two to one. Sufferers from migraine were few (consultation rate 4 per 1,000) compared with those in middle life (18 per 1,000) but there were about 4 women to each man in both age groups.

The conditions of the eye requiring most attention were 5, all with consultation rates about 20 per 1,000. "Conjunctivitis and ophthalmia" and "refractive errors" had similar sex incidence and were fairly constant from young adult life onwards. Cataract and glaucoma were largely confined to the aged group, affecting women much more than men. "Other diseases and conditions of the eye" had equal sex incidence.

Among conditions of the ear, "wax in the ear" required most attention (consultation rate 39, patient consulting rate 27). Apparently the chance of the wax being removed at the first consultation was about two to one. Men suf-

ferred from the effects of this proliferation on the part of nature in the ratio of 5 to 3 women. This complaint was only slightly less frequent in the two previous age groups. Otitis media demanded less and less attention through the age groups, till in the aged the consultation rate was 17 per 1,000 for women and 11 for men, though there was no such sex difference in the number of patients consulting. Ménière's disease had increasing attention through the age groups, finishing with a consultation rate of 15 per 1,000 in the aged. Deafness, though largely a condition of old age, demanded little attention (9 consultations per 1,000) and was rather more often found in women than men.

Diagram 36



Diseases of bones, joints, and musculo-skeletal system in those aged 65 and over. Consultation rates per thousand at risk by sex.

Diseases of the bones and organs of movement

In these diseases in the aged, the group of conditions called "Arthritis and rheumatism, except rheumatic fever" is responsible for the great majority of consultations. The consultation rate for the whole category is 611 per 1,000; for this group 537 per 1,000. The patient consulting rate for the whole category is 147, for this group 128 per 1,000. Consultations for arthritis and rheumatism are not a privilege of the aged alone, for their numbers increase steadily through the age groups, female preponderance becoming very noticeable after the age of the menopause. This arthritic group is broken down into 7 divisions which are shown in Diagram 36. It can be seen that in every division except "lumbago" there is a well-marked female preponderance. All these conditions are present from young adult life, increasing in each age group, and sometimes stepping up sharply in the aged as in osteo-arthritis.

Lumbago was again an exception, as consultations for this complaint were less frequent in the aged than in the middle-aged group. Rheumatoid arthritis was the most troublesome of the arthritic conditions to both patient and doctor, as it required an average of 8 consultations per patient, while no other condition in this group demanded more than 4.

In this section there are seven other diagnoses listed, each of comparatively small incidence. Five are of injury to, or disease of, soft tissue or cartilage in or around joints and tendons. They comprise internal derangement of the knee joint, displacement of intervertebral disc, synovitis, bursitis and tenosynovitis, flat foot and hallux valgus and varus. All these five in the aged were less common reasons for attention by the family doctor than at ages 15-64. In the aged rather more men than women had intervertebral disc trouble, rather more women than men were in the synovitis group. More men than women had flat foot, while hallux valgus and varus was virtually a feminine monopoly. The remaining two diagnoses are osteitis deformans, a disease of the aged, with equal sex incidence, and "other diseases of the bone, joint and musculo-skeletal system", a diagnosis spread through all the age groups, increasing slowly with the years.

Symptoms, senility and ill-defined conditions

In this group of diseases, intermediate in frequency of consultation between the diseases of bones and joints on the one hand and digestive disorders on the other, are recorded a number of "diagnoses" descriptive of symptoms and physical signs, which could not readily be included in one of the main categories of this Survey owing to the doubt or inaccuracy attaching to the diagnostic label. This state of affairs pertains to every general practice. Many patients are seen with minimum symptoms or evanescent signs, which do not enable the doctor to make a firm diagnosis. Hence in this group of conditions are found such diagnoses as "pain in chest" (which might be cardiac, respiratory, abdominal, muscular or neuritic in origin), "pain in back", "rash", "nervousness", "debility", "cough" and so on.

Numerically, the most important condition is "senility without mention of psychosis" which is responsible for nearly half of all consultations in this group, and has a strong female sex preponderance.

The next commonest condition is "disturbance of sleep", though consultations for this were only one-eighth of the rate for senility. Again there is a female sex preponderance, but this condition, unlike senility, increased with age through all the age groups.

"Acute heart failure, undefined" had the next highest consultation rate; it occurred mostly in the aged group and affected more men than women. Vertigo occurred at all ages, increasing to a maximum in the aged, and troubled the middle-aged almost as much, men and women being equally affected. The other diagnoses have little if any particular application to the aged.

Diseases of the digestive system

This is the last of the intermediate group of diseases in order of incidence, and has a consultation rate of 524 per 1,000 population. It is a fair-sized group at all ages, grows steadily through the three younger age groups, till, in the aged, it becomes $2\frac{1}{2}$ times as large as the youngest group. There is a slight male preponderance throughout, most marked in the 45-64 group. This type of disorder appears to grow more severe with age, for the number of consultations per patient grows steadily from 2 in the youngest group to a little over 4 in the aged.

These conditions can be grouped as follows: diseases of the stomach and duodenum take up 25 per cent of the consultations, while disorders of function of the stomach account for an additional 20 per cent. Five categories each contain about 10 per cent. These are diseases of the gallbladder, constipation, hernia of abdominal wall, "gastro-enteritis and colitis" and "other diseases of digestive origin". The remaining conditions occupy about 5 per cent of the total, viz. diseases of teeth, mouth, appendix, liver, rectum and anus. Male preponderance is small in the group of diseases of stomach, but large in duodenal ulcer and hernia of the abdominal wall. Consultations for gallbladder diseases are three times as common in women as in men. Disorders of function of the stomach and constipation have an equal sex incidence. When the group of diseases of the stomach and duodenum are examined in greater detail, it is found that, apart from disorders of function, gastritis and duodenitis is the largest group and has a slight female sex predominance. Ulcer of the duodenum follows but this diagnosis has a three to one male sex preponderance; ulcer of the stomach has 32 per cent fewer consultations with the male preponderance halved, i.e. three to two.

When the patient consulting rate for the aged is considered in conjunction with the number of consultations in each category, it is seen that a case of ulcer of the stomach averaged 8 consultations, one of ulcer of the duodenum 7, while gastritis and duodenitis claimed only 4. The gallbladder diseases, though much fewer in number claimed $6\frac{1}{2}$ consultations. As the average number of consultations per illness for the whole group of digestive disorders was a little over 4, it can be seen that the remaining conditions had few consultations per illness.

Disorders of the digestive system are not confined to the aged. Some wax, some wane, some alter little in frequency. Gastritis and duodenitis increased slowly through the age range, as did disorders of function, while appendicitis steadily fell with increasing age. Ulcer of the stomach and hernia were well distributed in the two older age groups, where the gallbladder diseases were found, though the incidence here is much higher in the aged. Ulcer of the duodenum claimed most victims in the middle-aged group. Constipation was well represented in the first three age groups, but leaped up in the aged, affecting both sexes equally.

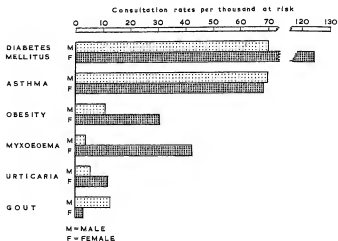
In this Survey the stomach was one of the most frequent sites of new growth (consultation rate 32 per 1,000) being second only to the prostate; the rectum came fifth and the remainder of the large intestine was sixth. Further details are noted later under the heading of "New growths."

Allergic, endocrine system, metabolic and nutritional diseases

In the aged, the last 4 disease categories have each accounted for about 10 per cent of the total consultations of this Survey. The next 7 account for about 4 per cent each. This particular group, slightly larger than the others, is of interest in that the female sex incidence overtopped the male by more than 3 to 2. Only in the case of gout was there a male predominance, but gout occupied less than 3 per cent of the consultations in this group of diseases. Asthma and hay fever had sex equality, so that the female predominance over male in diabetes (nearly twice), myxoedema (ten times) and obesity (thrice) was well marked. The patient consulting rate gives an average of 6 consultations per illness in this group but diabetes mellitus is well above the average with 9, asthma with 8, and thyrotoxicosis with 7 consultations. The order of incidence of the disease groups is shown in Diagram 39.

In the aged diabetes and asthma occupied more than half the consultations between them. Consultations for diabetes increased very slowly in the first three age groups, but in the aged jumped to almost three times the number seen in the middle-aged. Asthma, on the other hand, was troublesome in all the age groups, the consultation rate of about 40 per 1,000 population persisting through the two younger age groups, but rising to about 70 in the two older ones.

Diagram 39



Allergic, endocrine system, metabolic and nutritional diseases in those aged 65 and over. Consultation rates per thousand at risk by sex.

Myxoedema was of note only in the two older groups, but obesity was prominent also in the 15-44 year group, increased by half as much in the 45-64 year group, and fell to almost one third of this in the aged. Urticaria was frequent in youth and fell with age to an insignificant amount, with female sex predominance all through. Hay fever, most frequent in the 15-44 year group, also became rarer with age. Avitaminosis was rarely recorded but shows that it is still to be found, more particularly in the aged and more often in the female sex.

Diseases of skin and cellular tissue

This group of diseases also embraces about 4 per cent of the total of consultations for the aged in the Survey. There was a total sex equality and the

demand for consultations was low at $3\frac{1}{2}$ per illness. There was no numerically outstanding disease in the group. Eczema led the field, but only had $3\frac{1}{2}$ times the number of consultations for psoriasis, the twelfth disease in order of incidence. Eczema appeared evenly distributed through the age groups with an equal sex incidence, as did dermatitis. Consultations for chronic ulcer of the skin, pruritus, and psoriasis rose numerically through the age groups with female sex preponderance. Boil and carbuncle were commoner in the male and demanded fewer consultations with age, as did impetigo. Diseases of hair and sweat glands took humble place at the end of the list.

New growths

Another 4 per cent of the consultations in this Survey of the aged are due to new growths, 55 per cent of them for males, 45 per cent for females. The number of patients consulting is small so that the average number of consultations per illness is 9, the largest in the series. There are 23 sites or categories of growth listed, of which the first 8 in frequency constitute four-fifths of the whole. In descending order (consultation rates per 1,000 at risk) these are:

Prostate	58
Stomach	32
Breast	30
Lung, bronchus and trachea	24
Rectum	22
Large intestine except rectum	20
Cervix uteri	13
Skin	12

All these conditions occurred almost entirely in the two older age groups and were much commoner in the aged, except for growths of the lung and bronchus which were nearly as frequent in middle age as in old age, and growths of the breast which were only twice as common in old age. Neoplasms of corpus uteri were few, but were the only growths recorded with a greater incidence in middle age than in old age. The incidence of growths of lung and bronchus were twelve times as frequent in the males as in the female. In the male, growths of stomach were also more frequent, being about 60 per cent of the whole. The incidence in the aged of growths in the rectum was equal for the two sexes, but in growths of the large intestine was a little greater in the female sex.

Benign neoplasms were responsible for fewer consultations. Most are unspecified with regard to site; of those specified most are in female genital organs. In total the consultation rate is about a quarter of that for malignant growths.

The order of incidence (patient consulting rate) of all neoplasms follows closely the order of consultation rate, except for malignant new growths of the skin, in which the number of consultations per illness was low, though the incidence was slightly higher than for neoplasms of the stomach (2.7 per 1,000 population at risk).

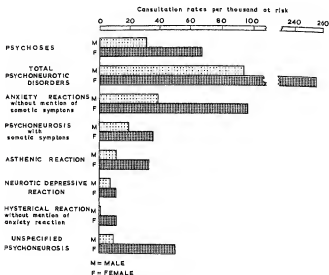
Mental, psychoneurotic and personality disorders

In this group of disorders in the aged, which again took about 4 per cent of the total consultations, women were $2\frac{1}{2}$ times as frequent sufferers as were men. This imbalance persisted to a similar degree through the age groups.

The middle-aged demanded more consultations than any other group, averaging 4 to an illness. The aged required 15 per cent fewer consultations, but received 5 to each illness. There are two main categories, the psychoses (about 20 per cent) and the psychoneurotic disorders (about 80 per cent). The remaining categories are alcoholism and mental deficiency which together only amounted to 0.5 per cent of the whole group.

The psychoses in the aged were twice as common in women as in men. Consultations in this age group were five times as common as in the 15-44 year group and three times the 45-64 year group.

Diagram 40



Mental and psychoneurotic disorders in those aged 65 and over
Consultation rates per thousand at risk by sex.

The psychoneurotic disorders in the aged were divided into the following headings, placed in order of incidence:

- Anxiety reaction without mention of somatic symptoms
- Unspecified psychoneurosis
- Psychoneurosis with somatic symptoms
- Asthenic reaction
- Neurotic-depressive reaction
- Hysterical reaction without mention of anxiety.

All showed a maximum incidence in the middle-aged group. The sex incidence was about 2 to 1 in favour of women with the exception of hysterical reaction (Diagram 40), where the proportion of consultations was 5 to 1 in middle age and 9 to 1 in the aged.

Alcoholism was the only disorder with male predominance but was a very small problem in this Survey, while mental deficiency in the aged accounted for only one consultation per 1,200 in this group of disorders.

Accidents, poisoning and violence

This is another group of conditions occupying about 4 per cent of the total consultations for the aged. The striking fact about them is the comparison between the female sex preponderance in the aged (about 60 per cent) and the considerable male sex preponderance in the other groups, which rose to more than 2 to 1 in the 15-44 year group. These conditions did not take up much of the doctor's time, for they averaged about three consultations per incident.

Diagram 41 shows that the greater female sex incidence in the aged was confined to three categories: fractures; contusion and crushing; burns. In the soft tissue injuries such as sprains, strains, laceration, and superficial injuries men and women suffered almost equally.

Fractures were far the most frequent source of consultation and together with contusion and crushing were responsible for half the attention in the whole group. On the other hand burns occupied a mere 5 per cent.

Diseases of the blood and blood-forming organs

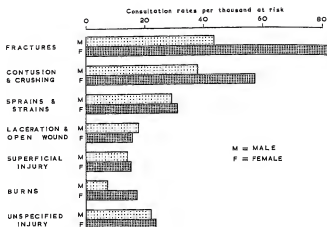
This is the last of the groups each responsible for about 4 per cent of the total consultations of the aged. Each episode is time-consuming for the doctor, for the average is 9 consultations for each patient consulting. Again there is a higher female sex incidence (Diagram 42), in the ratio of 3 women to 2 men. There are three groups of conditions - pernicious anaemia; iron deficiency anaemia; unspecified anaemias. Of these, pernicious anaemia has a consultation rate three times greater than either of the other two. In each category the incidence increases with age, maintaining a strong bias in favour of the female sex in each age group.

Diseases of the genito-urinary system

This group of diseases took under 3 per cent of the total consultations in the aged, had a male predominance of 5 males to 4 females and consisted largely of three conditions: hyperplasia of the prostate in the male, utero-vaginal prolapse in the female, and cystitis common to both sexes with a slight female preponderance. The Survey records the total and sex incidence of the various conditions and clearly shows that in the aged more women than men suffer from the inflammatory diseases of the urinary tract, but the incidence of calculi of kidney and ureter, though small, is greater in men.

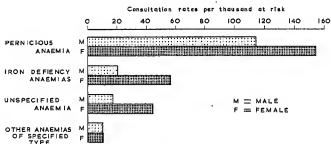
These conditions varied through the age groups. Hyperplasia of the prostate was found almost entirely in the aged, the incidence being 7 times that in the middle-aged. Utero-vaginal prolapse was seen first in the 15-44 year group, more than doubled its numbers in the middle-aged and again more than doubled in the aged. Cystitis steadily increased in frequency with age, females always being the more affected, especially in the younger groups. The other inflammatory conditions of the urinary tract were well distributed through the age groups, the female sex incidence being the greater throughout. The group entitled "other diseases of female genital organs" had its greatest number of consultations in the 15-44 year group, and tailed off to one-fifth of this number in the aged. "Other diseases of male genital organs" were most frequent in the youngest group, the aged having only half the number of consultations. In this group of disorders, menopausal symptoms provided the largest number of consultations in the middle-age group. Few of the aged were seen for this condition.

Diagram 41



Accidents, poisoning and violence in those aged 65 and over.
Consultation rates per thousand at risk by sex.

Diagram 42



Anoemias in those aged 65 and over.
Consultation rates per thousand at risk by sex.

Infective and parasitic diseases

This group is small, for it contains only 1.5 per cent of the total consultations in the aged. More than one-third of the consultations were for herpes zoster, with a very slight female sex preponderance. Half this number of consultations went to the next most frequently seen disease, tuberculosis of the respiratory system, but here there is a strong male preponderance to the extent of 4 to 1. Other forms of tuberculosis took 5 per cent of the total consultations, and were almost equally distributed between the sexes. Syphilis and its sequelae had a sex ratio of 4 men to 3 women and provided 7 per cent of the total consultations. Herpes febrilis came next with a 4 per cent incidence, largely female, and was followed closely by infective hepatitis, dermatophytosis and dysentery. The list ended with a number of conditions, none of which exceeded 1.2 per cent of the total consultations, varying from mumps to meningococcal infections, from Bornholm to Boeck's sarcoidosis, from septicaemia to scabies.

Non-sickness

This is a group of consultations which occupies much of the doctor's time in the first half of life with advice on infant feeding, maternity work and so on. Indeed the consultations in the first two age groups were respectively over 7 per cent and over 11 per cent of the total. In middle age they fell to 0.4 per cent and in old age to the negligible amount of 0.2 per cent.

DISCUSSION

Contemplation of the facts and figures given in these brief analyses of the diseases and conditions for which the aged consulted their doctors, brings to light some points of great interest. The first is that diseases of the circulatory system stand out from all other conditions in frequency of consultation in the aged. Patients consult with these conditions more than twice as often in old as in middle age and six times as often as in the 15-44 year group. In fact one-fifth of all people over 65 consulted for diseases of the circulatory system in the year under review. There is only one other category of disease which occurs much more often in old age than in the younger ages and this is the group of new growths. They are doubled in incidence in each age group. For every one in the years 0-14, there are 2 between 15-44, 4 between 45-64 and 8 in the aged. All the other groups of diseases are spread fairly evenly through the age groups and some, like the infectious diseases and skin conditions, fall steadily with increasing age.

A glance at the consultation rates shows that the conditions for which the aged had most treatment differed widely from those of the other age groups. The first ten in order of frequency of consultation (amount of work for the family doctor) are compared below with the rates for the middle-aged:

Disease or Condition	Consultation rates per 1,000 at risk	
	Aged (65 years and over)	Middle-aged (45-64)
Bronchitis	688	368
Arthritis and rheumatism	537	338
Hypertensive disease without mention of heart	352	149
Myocardial degeneration	286	27
Senility without mention of psychosis	263	0
Vascular lesions affecting C.N.S.	233	37
Psychoneurotic disorders	191	264
General arteriosclerosis	161	10
Congestive heart failure	158	21
Coronary disease	154	59

It will be observed that 6 out of these 10 conditions are circulatory, and that hypertensive disease and coronary disease are the only circulatory diseases which figure at all prominently in the middle-aged, among whom consultations for the common cold, influenza and menopausal symptoms come in the first ten. In fact, the aged consult for far more serious conditions than do any other age group.

Out of the 14 categories of diseases there are certain specific conditions which occur almost entirely in the aged. If one takes those diagnoses which were made at least seven times as often in the aged as in any other age group, they are, in order of precedence:

- Senility
- General arteriosclerosis
- Cataract
- Myocardial degeneration
- Congestive heart failure
- Hyperplasia of prostate
- Vascular lesions affecting the central nervous system.

Among the diagnoses made at least four times as often in the aged are:

- Paralysis agitans
- Glaucoma
- New growth of stomach.

Myocardial degeneration, congestive heart failure, general arteriosclerosis and vascular lesions of the central nervous system are degenerative conditions of the cardio-vascular system with equal sex incidence, and it is reasonable to add senility to this collection, for senility in most cases is probably the result of an insufficient blood supply to the brain from vascular damage or degeneration. These five circulatory conditions, all of them potentially fatal, are thus the prerogative of old age.

Coronary disease and hypertensive disease are not included as such, for they have an incidence in middle age approaching half that of the aged, the first having a large male predominance and the second a large female one.

The other two of the commonest diagnoses in the aged are hyperplasia of the prostate and cataract, which, though degenerative conditions, do not threaten life except by secondary effects or the risk of operation. The next three diagnoses, those four times as frequent in the aged as in the other age groups, are paralysis agitans, glaucoma, and new growth of the stomach. The appearance of paralysis agitans in this company of diseases of the aged makes one wonder whether the basic cause is a circulatory degeneration.

It is interesting to note that diagnosis of degenerative conditions of the eye occurred almost entirely in the aged, while degenerative ear conditions in middle age, as exemplified by deafness, were noted as often as once for every three in old age.

Though the order of incidence of the diseases in the aged group is different from that of the other age groups, the diseases of the circulatory and respiratory systems were responsible for the greatest amount of work on the part of the family doctor, both in the aged and in the total of all age groups. The consultation rates for the diseases associated with bones and joints, the endocrine and metabolic conditions, and the new growths, all came higher in the list for the aged than in the list for all ages. But the main difference was the greater number of consultations per patient consulting in the aged group. For example, in circulatory diseases, the number of consultations per patient consulting in the various age groups was $2\frac{1}{2}$ at 0-14 years, 3 at 15-44 years, 6 at 45-64

years and 8 at 65 years and over. Such differences were noticeable to a varying extent in most of the other diseases and conditions.

The final condition which occurred at least five times as often in old age as in younger age groups is "new growth of the stomach". On the average, all new growths were diagnosed in the aged only about twice as often as in the middle-aged group (45-64 years). Diagnoses of new growths of the aged, compared with those of middle age, were made in the following ratios:

Prostate	11 to 1
Stomach	5 to 1
Rectum	4½ to 1
Large intestine	3 to 1
Larynx	2 to 1
Breast	2 to 3
Uterus	1 to 1
Lung, bronchus and trachea	2 to 1

This suggests that the prostate and alimentary canal in middle life are peculiarly more resistant to new growths than in later life.

To temper any depression caused by the relating of so many conditions and diseases which are diagnosed more frequently in the aged than in younger age groups, it is necessary to record the conditions seen less frequently in the aged.

Apart from the diseases of childhood there are 29 such diagnoses and they may be divided into three sections. First are the conditions due to infection. They are:

- Phthisis
- Common cold
- Chronic sinusitis
- Acute pharyngitis
- Acute tonsillitis
- Influenza
- Otitis media
- Otitis externa
- Boil and carbuncle
- Impetigo
- Pyelitis, pyelocystitis and pyelonephritis
- Calculus of kidney and ureter
- Diseases of sweat and sebaceous glands
- Diseases of breast
- Appendicitis.

All these were less commonly noted in the aged than in the age groups 15-64 years.

A second section contains diagnoses involving reaction to stimulus, whether allergic, toxic, environmental. These were:

- Hay fever
- Migraine
- Dermatitis
- Duodenal ulcer
- Psychoneurotic disorders (excluding anxiety reactions)
- Anxiety reactions.

The third section is a mixed bag:

- Lumbago
- Displaced intervertebral disc
- Diseases of teeth
- Hallux valgus and varus
- Obesity
- Chronic rheumatic heart disease
- Haemorrhoids
- Fractures in the male.

The third section of these less frequent diagnoses in the aged may conceivably be accounted for by such possibilities as death before 65 years in most cases of chronic rheumatic heart disease; loss of teeth in middle life; operation for haemorrhoids before 65 years; loss of pride in appearance in obesity and hallux valgus and varus; retirement from active life in lumbago, displaced intervertebral disc and fractures in the male. The first two sections, however, suggest that in old age either resistance to infection increases, or a suitable pabulum for virus or bacterium diminishes. That fewer diagnoses are made in old age of the conditions involving reaction to stimulus supports the view that the ability to respond diminishes with age.

The group of conditions entitled "Accident, poisoning, violence" had its highest incidence in childhood and fell in each successive age group.

There is a small but interesting group of common conditions, for which the family doctor was asked to help, which was evenly spread through the age groups from 15 years onwards. They were:

- Epilepsy
- Wax in ears
- Chilblains in the male
- Gastroenteritis and colitis
- Flat-foot
- Conjunctivitis.

Ageing seemed to have little effect on the number of consultations for these conditions.

SUMMARY

The oldest age group in this Morbidity Survey is the 65 and over group. The folk in this group have been entitled "aged." The consultation rate of the aged was 50 per cent above that of the middle-aged (45-64 years), and 100 per cent above the two younger groups.

The patient consulting rate - or incidence of disease - was fairly evenly spread through all the age groups, which shows that the number of consultations per illness increased steadily with age. Old women had 10 per cent more consultations than old men, and their patient consulting rate was similarly higher.

Nearly half the total consultations of the aged were for circulatory or respiratory disorders.

Almost all the diseases of the aged, which were only rarely encountered in younger persons, were degenerative circulatory conditions. The others were cataract, glaucoma, hyperplasia of prostate and new growth of stomach.

Twenty-nine conditions are listed which were less frequently diagnosed in the aged than in younger patients. They are mostly infections and diagnoses involving reaction to stimulus. A few conditions were found equally in all age groups, e.g. epilepsy, wax in the ears, conjunctivitis.

APPENDIX I

List of Principals and Qualified Assistants
who took part in the Survey

(a) Principals

S. Abrahams	Leytonstone
H. W. K. Acheson	Stoke-on-Trent
G. A. S. Akeroyd	Harpenden
June Alexander	North Ferrisby
J. B. O. Armstrong	South Norwood
J. Atkinson	Leeds
P. J. Atkinson	Leeds
A. H. W. Babington	Rhyl
M. B. Barry	Stoke-on-Trent
R. Beesley (deceased)	Bolton
W. H. Berry	Carnforth
A. S. Blake	Saffron Walden
H. Bloom	Teddington
P. Bradbury	Woodthorpe
D. D. Brown	Frampton Cotterell
J. F. Burdon	Paignton
T. J. Burke	Blackburn
W. H. Burns Begg	Speldhurst
R. C. Burton	Sheffield
P. S. Byrne	Millthorpe
H. F. Cantwell	Ibstock
T. E. A. Carr	Southampton
L. S. Castleden	Dunmow
M. F. Charcher	Pontypridd
H. F. Clay	Doncaster
A. Clein	Fulham
Elizabeth C. M. Clow	Caistor
J. M. Clow	Caistor
K. McL. Cobban	Wirral
C. D. Cogswell	Southall
E. A. Cookson	Ormskirk
E. Cretney	Goole
D. M. Curtis	Manchester
M. Curwen	Margate
Ada M. Dansie	Welwyn
C. Dansie	Welwyn
C. B. Dansie	Welwyn
O. Dansie	Welwyn
Elizabeth B. Dowell	Bentham
T. L. Dowell	Bentham
G. W. Dryland	Kington
K. M. Duncan	Preston
T. S. Eimerl	Warrington
H. H. A. Elder	South Norwood
A. Elliott	Ilford
Elsie E. Elmer	Leeds
T. H. Elmer	Leeds
D. I. Evans	Aberystwyth
L. F. Evans	Bolton
R. F. Fairweather	Manningham

(a) Principals-continued

E. Falik	Burnley
M. J. Falkner-Lee	Christchurch
G. Fildes	Bolton
J. Findlater	Carnforth
D. I. Finer	Beckenham
E. K. A. Firth	Cowley
E. D. Forster	Matlock
P. T. Fraser	Carnforth
A. Fry	South Norwood
J. Fry	Beckenham
A. Fullerton	Batley
E. Gancz	Dartford
W. W. Gerrard	Banstead
A. C. Gillies	Macclesfield
G. H. Going	Dunmow
R. N. R. Grant	Workington
G. F. Green	Batley
M. G. Green	Ormskirk
A. Greenwood	Leeds
E. J. Guest	Cirencester
R. W. P. Hall	Windermere
N. Hargreaves	Milnthorpe
S. H. Harrison	Mansfield
T. L. Henderson	South Norwood
P. N. Holmes	Milnthorpe
R. E. Hope Simpson	Cirencester
P. Hopkins	Hampstead
Elizabeth J. Horder	Hampstead
J. P. Horder	Hampstead
R. Horn	Ipswich
C. R. G. Howard	Ringwood
D. D. Inch	Leeds
E. Isherwood	Blackburn
W. L. Jack	Kington
M. S. Kay	Christchurch
Agnes T. Kennie	Paignton
W. W. King-Brown	Peckham
S. E. Knowles	Peckham
A. J. Laidlaw	Worcester
Marjorie F. Landau	Manchester
F. W. Lapage	Alford
D. A. Lawrence	Dartford
J. Leary	Halifax
F. H. Lee	Long Eaton
J. C. Leedham-Green	Southwold
H. Leiper	Bury
G. W. Lewis	Leeds
W. Limont	Southport
J. B. Longmore	Shrewsbury
W. J. H. Lord	Alford
P. Y. Lyle	Southport
A. I. Macleod	Clevedon
G. L. McCulloch	March
I. G. McGregor	Windermere
S. M. G. McGuffie	Grange-over-Sands
T. O. McKane	Dunmow

(a) Principals-continued

Betty M. Margetts	Morden
E.G.L. Mark	Macclesfield
W. Marshall	Harrogate
T.Y. Martin (deceased)	Bury
R.W.T. Mason	Grange-over-Sands
W.J. Meldrum	Ibstock
N.E. Melling	Sennybridge
A.B. Milligan	Worcester
W.T. Mills	Marlborough
B.R. Mitchell	Kington
Margaret I. Morgan	Aberystwyth
J.H. Mott	Southport
G. McK. J. Nicholl	Alford
J.A. Nightingale	Grange-over-Sands
D. O'Driscoll	Blackburn
W.P. O'Regan	Ormskirk
G.P. Oxborrow	Hull
A.J. Pearce	Birmingham
W. Pearce	Leeds
Kathleen M. Pearson	Milnthorpe
H.C. Petch	Harrogate
A.S. Playfair	Cambridge
Clive G. Potter	Sutton
J.C.E. Pougher	Leamington Spa
John Price	Camberley
S.M. Pruss	Ilford
N. Pyecroft	Calverley
P.N. Rampal	Blackburn
K. Robinson	Bolton
P. Rowntree	York
L.C. Rutter	Wolverhampton
J. Sagar	Leeds
M. Schapira	Keighley
R.A.M. Scott	Leeds
C.J.P. Seccombe	Southall
I.M. Segal	Ilford
R. Selby	Neston
A. Simpson	Neston
R. Simpson-White	Plymouth
J.L. Skene	Windermere
R.N.C. Smith	Ilford
R.G.W. Southern	East Horsley
B. Spencer	Burnley
C.J.H. Starey	High Wycombe
R.J. Stephen	Bristol
W.M.B. Strangeways	Cambridge
M. Tannenbaum	Macclesfield
G.M.T. Tate	Mansfield
H.T. Tate	South Mansfield
F.F. Temple	Alford
R.J.D. Temple	Ormskirk
J.C. Turner	Southall
J.C. Turner	Leytonstone
J. Waddell	Manchester
E.O. Walker	Hythe, Hants.
C.W. Ward	Harrogate

(a) Principals-continued

P. Watson	Mansfield
W. H. Watson	Shrewsbury
C. A. H. Watts	Ibstock
M. A. Weller	Thaxted
W. T. Westwood	Stretford
A. Whitewright	Bolton
J. M. S. Whiting	Brough, Yorks.
J. W. Wigg	Hampstead
A. Wilkie	Droylsden
R. Willan	Shaw, Lancs.
W. K. Willan	Shaw, Lancs.
G. M. Williams	Portmadoc
M. Williams	Harpenden
J. Wilson	Bradford
L. A. C. Wood	Penshurst
Sidney L. Wray	Carnforth
P. M. Wright	Bentham
D. Yuille	Hull
D. F. Yuille	Hull

(b) Partners or Qualified Assistants who co-operated

P. B. Bailey	J. H. Hughes
L. M. Barrett	J. E. Lee
A. R. M. Bateman	Gertrude M. S. Leedham-Green
Stella M. Benson Cooke	Sylvia R. McLeod Baikie
J. R. Birkett	June M. MacTaggart
Margaret E. M. Blanden	Nora Mason
J. D. Borham	J. J. Medalia
Marian R. Brown	R. H. Moodie
N. Chisholm	W. D. O'Regan
Sheila M. G. Crosland	L. B. Prescott
K. D. Davies	Alexander Reid
J. G. Dawe	A. W. Robertson
Yvonne H. H. Dixon	J. L. Russell
J. Freeman	G. J. Ryder
K. Gammon	K. Scott
P. Jane Grubb	Gillian M. Stevens
M. Headlam	A. P. O. Stewart
Frances M. Hill	Mary W. Sturges
C. Hindley	G. P. Tannen
Joyce Honey	H. K. Thompson

APPENDIX II

Members of the College of General Practitioners
who took part in the organising and planning of
the Survey

G. F. Abercrombie	R. J. F. H. Pinsent
D. L. Crombie	G. I. Watson
R. M. S. McConaghey	C. A. H. Watts

APPENDIX III

The Editorial Sub-Committee of the Research Committee of Council

John Fry

R. J. F. H. Pinsent

C. A. H. Watts

APPENDIX IV

The constitution of the standard regions of England and Wales used in this volume is as follows:

REGION I-	REGION V	REGION VIII
<u>Northern</u>	<u>London and South</u>	<u>Wales</u>
Cumberland Durham Northumberland Westmorland Yorkshire, North Riding	<u>Eastern</u> Essex, Part of ^a Hertfordshire, Part of ^a Kent London Admin. County Middlesex Surrey Sussex, East Sussex, West	Brecknockshire Carmarthenshire Glamorganshire Monmouthshire Anglesey Caernarvonshire Cardiganshire Denbighshire Flintshire Merionethshire Montgomeryshire Pembrokeshire Radnorshire
REGION II	REGION VI	REGION IX
<u>East and West Ridings</u>	<u>Southern</u>	<u>Midland</u>
Yorkshire, East Riding Yorkshire, West Riding	Berkshire Buckinghamshire Dorset Oxfordshire Southampton Wight, Isle of	Herefordshire Shropshire Staffordshire Warwickshire Worcestershire
REGION III	REGION VII	REGION X
<u>North Midland</u>	<u>South Western</u>	<u>North Western</u>
Derbyshire, Part of ^a Leicestershire Lincolnshire - Parts of Holland Parts of Kesteven Parts of Lindsey Northamptonshire Nottinghamshire Peterborough, Soke of Rutland	Cornwall Devon Gloucestershire Somerset Wiltshire	Cheshire Derbyshire, Part of ^a Lancashire
REGION IV		
<u>Eastern</u>		
Bedfordshire Cambridgeshire Ely, Isle of Essex, Part of ^a Hertfordshire, Part of ^a Huntingdonshire Norfolk Suffolk, East Suffolk, West		

1. All except Buxton M.B., Glossop M.B., New Mills U.D., Whaley Bridge U.D., and Chapel-en-le-Prith R.D.
2. All except East Ham C.B., West Ham C.B., Chingford M.B., Wanstead and Woodford M.B., Leyton M.B., Walthamstow M.B., Ilford M.B., Barking M.B., Dagenham M.B., Waltham Holy Cross U.D. and Chigwell U.D.
3. All except Barnet U.D., Bushey U.D., Cheshunt U.D., East Barnet U.D., and Elstree R.D.
4. All areas stated in 2 above.
5. All areas stated in 3 above.
6. All areas stated in 1 above.

APPENDIX V

The constitution of the Social Classes referred to in this volume are:

Class I	Professional, etc. occupations
Class II	Intermediate occupations
Class III	Skilled occupations
Class IV	Partly Skilled occupations
Class V	Unskilled occupations

Children under 15 years of age have been classified by the occupation of the person on whom they were dependent, usually the father.

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